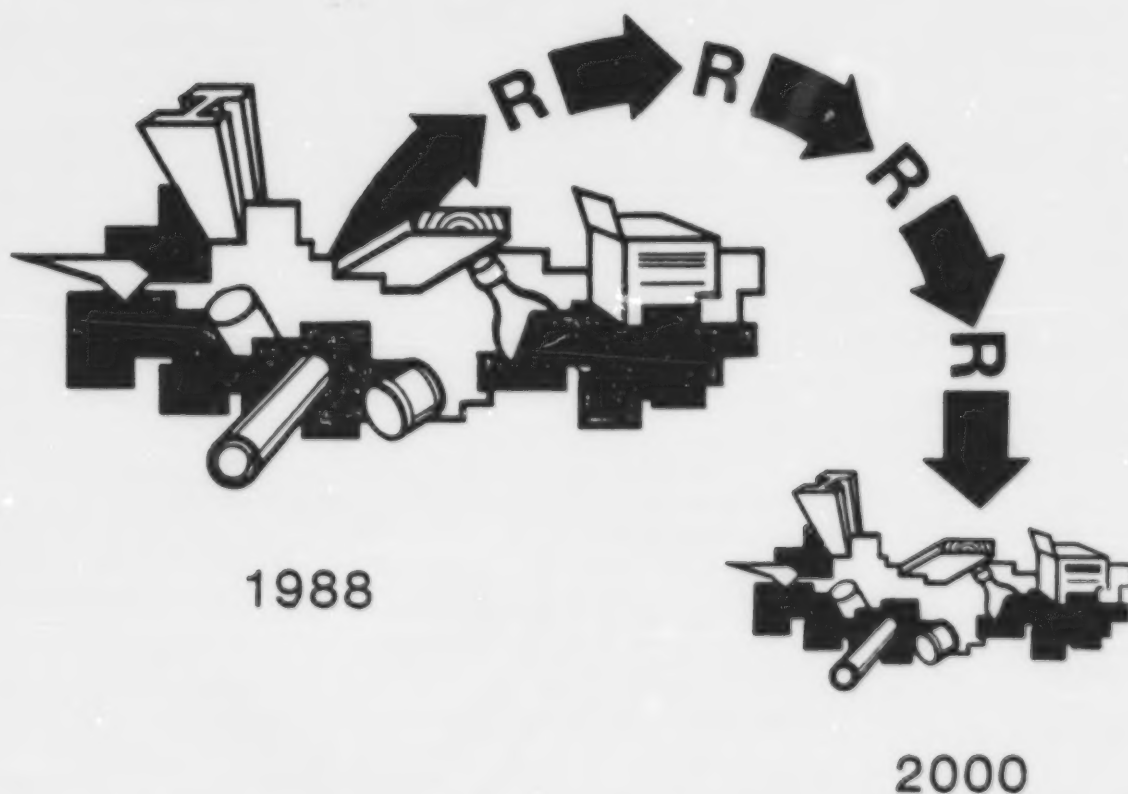


Canadian Council
of Ministers
of the Environment

CCME

Le Conseil canadien
des ministres
de l'environnement

Economic Considerations in the Development of the National Packaging Protocol



ECONOMIC CONSIDERATIONS IN THE
IMPLEMENTATION OF A NATIONAL
PACKAGING PROTOCOL

Report to National Packaging Task Force

June 1990



PREFACE

This report is one of a series prepared for the National Packaging Task Force in support of the development a national packaging policy for Canada. The complete series of reports is as follows, together with the companies that prepared them:

- | | |
|---|---|
| • Packaging Application in Canada; | MacLaren Engineers Inc. |
| • Packaging Reduction, Reuse and Recycling Technology Options; | MacLaren Engineers Inc. |
| • Stakeholder Positions and Response to the Development of the National Packaging Protocol; | MWR and Associates |
| • Household Consumers and Packaging; | Resource Systems Management International |
| • Legislative Initiatives Relating to Packaging and Implications for the National Packaging Protocol; | Resource Systems Management International |
| • Economic Considerations in the Development of the National Packaging Protocol; | The Coopers and Lybrand Consulting Group |
| • Environmental Life Cycle of Packaging; | VHB Research and Consulting |
| • Agenda for Action for the National Packaging Protocol; | Recycling Development Corporation |

The key data and analyses of each of these reports are included in a further report titled The Technical Basis For The National Packaging Protocol: Summary Report prepared by MacLaren Engineers Inc. Input to all reports has been received by M. J. Ramsay and Associates.

The National Packaging Task Force is a multi-stakeholder task force comprised of representatives from federal, provincial and territorial governments, municipalities, industry, environmental groups and consumer groups. The goal of the task force has been to develop and recommend to the Canadian Council of Ministers of the Environment a national packaging

policy for Canada.

In March 1990, the Canadian Council of Ministers of the Environment adopted the national packaging policy that was recommended to it by the National Packaging Task Force. The policy takes the form of a National Packaging Protocol that has been agreed to by all members of the task force. The National Packaging Protocol is included in this series of documents as Appendix A of The Technical Basis For The National Packaging Protocol: Summary Report.

**ECONOMIC CONSIDERATIONS IN THE
IMPLEMENTATION OF A
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EXECUTIVE SUMMARY

BACKGROUND

The objective of the Canadian Council of Ministers of the Environment (CCME), through the National Packaging Protocol (NAPP), is the overall reduction in waste generation of 50% by the year 2000. Related specifically to NAPP, it requires that 50% of packaging in the waste management stream be diverted from landfill by the year 2000, using primarily, reduction, reuse and recycling.

The specific objective of this report is to identify the economic factors which should be considered in the further development and implementation of the six policies which comprise NAPP. The focus of this report is to identify areas of impact on the packaging producer, user and distributor industries, and to suggest how these should be factored into the next stages of NAPP. It also identifies areas where NAPP could stimulate economic activity.

NAPP represents a set of principles and despite intensive industry interviews there is no definitive singular response to NAPP. This is because of there is no single best solution and the fact that companies will adjust their packaging to meet the imperatives of NAPP which are consistent with their corporate philosophies, strategies and cost structure, in the context of the marketplace. There is not enough known about how each segment of the packaging - production and end-users industries, will respond to NAPP, and hence costs of adopting and implementing these policies to quantify the absolute economic impact in terms of jobs, growth, income, etc. How companies respond to NAPP will depend on how NAPP is driven by end-user requirements and the waste management systems in place in each province. Nor has any decision been made about which packaging types will be the target of particular 4R initiatives to meet the NAPP objectives. This is further complicated by the constraints on re-use of packaging in major end-using sectors such as food and beverage, and the need for infrastructure and packaging types to be developed to facilitate re-use and recycling. The economic impact is inextricably tied to NAPP's implementation and despite intensive discussions with major firms in key segments, it is not possible to develop credible quantitative estimates of economic impact. Producers and users of packaging indicate a strong commitment to the Protocol, but most are still in the early stages of assessing how they will respond.

Packaging waste is generated at all stages of the production process and in many industries considerable volumes of corrugated, plastic containers and metals are recovered and recycled. A comprehensive response to NAPP on the part of industry will examine these production packaging wastes as well as reduction re-use and recycling approaches to the packaging which ultimately reaches the consumer.

Thus, this report identifies economic factors which should be considered in the implementation of NAPP which will determine the overall economic impact.

THE PACKAGING INDUSTRY IS COMPRISED OF A NUMBER OF DIVERSE SECTORS

The packaging industry is comprised of a number of diverse sectors, including producers of paper, glass, plastic, metals and wood and converters of these materials into a wide range of packaging products. Each of these sectors have different characteristics in terms of size, labour to capital ratios, regional distribution, ownership, structure and trade sensitivity, and therefore implementation of the Protocol will have very different effects on each of these sectors.

There is little consistency among the sectors in the packaging industry in terms of industry trends and performance. The differences in the financial health of these industries and how they choose to respond to the Protocol will determine how the NAPP will ultimately affect them.

MEASURES WHICH REDUCE THE PACKAGING INDUSTRY'S PRICE COMPETITIVENESS WILL RESULT IN INCREASED LEVELS OF IMPORT PENETRATION

The packaging industry in Canada is mostly focused on the domestic market, with only some segments of the paper-based packaging sector exporting a significant portion of their shipments. Up until 1989, tariffs have played an important role protecting the domestic market, tariffs into the U.S. have generally been lower but, notwithstanding this, Canadian packaging products have not generally been marketed in the U.S. due to the size and competitiveness of the U.S. packaging industry. Several sectors of the Canadian packaging industry are potentially vulnerable to U.S. competition due to their higher costs. To ensure a level playing field, the Canadian packaging sector wants to see the same requirements to environmentally friendly packaging placed on both domestically-produced and imported packaging.

The packaging industry believes that they are less competitive than their U.S. counterparts due to higher tax rates in Canada, higher interest rates, interprovincial trade barriers and the costs of health care, occupational health and safety, etc. and, most recently, the voluntary tax to support provincial recycling programs.

THE ECONOMIC CYCLE AND ITS IMPACT ON INTEREST AND EXCHANGE RATES MUST BE CONSIDERED

Many of the sectors in the packaging industry depend on the relative value of the Canadian dollar vis-à-vis United States. The exchange rate can influence the

relative competitive position of plants in the various countries, and currency changes, such as devaluation of Scandinavian currencies in the early 1980's, can substantially change existing competitive positions. Inflation and economic strength can appreciate currencies as well and change the competitive balance.

Until 1989, the exchange rate has also been an important factor favouring Canadian firms against U.S. penetration of the domestic market. Nevertheless, U.S. producer can and do overcome that disadvantage from time to time and penetrate the Canadian market.

THE PROTOCOL MUST RECOGNIZE THAT THE PACKAGING INDUSTRY IS DRIVEN BY END-USERS OF ITS PRODUCTS

The key factor to understand when expecting the packaging industry to respond to NAPP is the degree to which it is influenced by end-user industries. The major packaging users, such as the food and beverage industry, create the demand which in turn drives and supports the packaging manufacturers. Therefore, the packaging producer is not autonomous and cannot act alone when implementing change.

The impetus for change will have to come to a great extent from the key user industries, who in turn are influenced by the retailer and ultimately the consumer. Preferences of end-users, retailers and consumers will also be tempered by the extent to which recycling/re-use infrastructures are in place to facilitate implementation of the Protocol. Provinces and municipalities have taken responsibility for some of this infrastructure development, notably the collection of source separated recyclables, but recycling the material collected into new products has been left to industry. While this provides the opportunities for new products and new businesses, these do not develop overnight. In light of increasing trade related competitive pressures, both the packaging user and producer industries will have to respond with products and packaging which will answer the market's demand.

Governments also play a role in determining packaging requirements through regulations for health and safety, bilingual labelling, etc., and industry needs, for example for product security, play an important role in determining packaging. These factors may limit the ability of industry to make significant reductions in packaging and shift their emphasis to other 4R measures.

THE COMPETITIVENESS OF THE MAJOR PACKAGING USER INDUSTRIES AND THEIR ABILITY TO INFLUENCE PACKAGING CHOICE NEEDS TO BE CONSIDERED IN IMPLEMENTING NAPP

It is important to consider the performance trends of the industries which are significant users of packaging products, as they have a major impact on the "robustness" of the packaging industry. One of the most important user-industries is food and beverage products industry. It consumes nearly 90% of glass containers and anywhere from one-third to one-half of other packaging products including metal cans, folding boxes, corrugated cartons and plastic products. Other important industries include pharmaceutical, health and beauty products and other chemical products, most of which are covered by the industry classification of "chemical and chemical compounds industries". Statistics Canada data indicate that the food, beverage and chemical products industries together account for over 60% of the value of all packaging used in Canada.

THE FOOD INDUSTRY AND SOME SECTORS OF THE BEVERAGE INDUSTRY WILL BE UNDER SIGNIFICANT COMPETITIVE PRESSURE FROM OTHER SOURCES

The Canadian food and beverage industry, in Canada, will be facing increasing competitive pressures stemming from the implementation of the Canada-U.S. Trade Agreement (CUSTA) and the direction in which the Uruguay Round of the GATT negotiations is heading. Agricultural policies are a major area of trade negotiation. Increasing bi-lateral and multi-lateral trade policies will likely result in restructuring of the food and beverage industry, and consequently on the packaging industry.

THE REGIONAL PERSPECTIVE

Of the three major packaging user industries, the food processing industry is significant, in terms of proportion of provincial shipments, in most regions across the country, with greater proportionate role in the diversified regional economies of the Atlantic provinces and the Prairies.

The regional distribution of the main user industries illustrates the relative importance of those industries to their respective provincial economies. Although, most of the user industries are concentrated in Ontario and Quebec, they have more significant role in other provinces. The industries in the provinces outside of Ontario, Quebec and to some extent British Columbia, are generally smaller and less able to respond to competitive pressures. They are often located in these markets either because of transportation costs or government regulations.

THE RELATIVE ABILITY OF THE KEY USER INDUSTRIES TO RESPOND TO NAPP HAS TO BE CONSIDERED

Although three major packaging user industries have been identified; food, beverage and chemical products manufacturers, there are many sub-sectors, particularly in the food industry which have specific concerns which need to be addressed individually. These include:

- ♦ low profitability in many industry sectors,
- ♦ size of plants not cost efficient,
- ♦ transportation costs,
- ♦ new investment required in machinery and equipment,
- ♦ branch plant structure.

Under CUSTA and GATT, the Canadian marketplace will become more and more international, which may benefit some sectors and be a disadvantage to others which have operated behind a tariff wall. Generally it is anticipated that CUSTA will lower input costs (such as packaging, raw ingredients, equipment), but on the other hand result in more competition on the output side. Thus improved efficiency and new market development efforts will be important elements of the adjustment process. Some of the food sectors, which are the more significant users of packaging (e.g., fruit and vegetable, dairy, biscuits and confectionary) also experience the highest import penetration levels.

It is likely that some degree of rationalization and specialization of production runs will also occur in Canada, particularly in sectors where foreign ownership is high. The industry is also still feeling the effects from a number of mergers and takeovers which have taken place over the past few years. Although the pace of these activities seems to have slowed some, the possibility of much restructuring within the new configuration remains.

Environment issues are high on the agenda of the food, beverage and chemical products industries for the 1990's. A comprehensive approach looks at production processes, as well as their choice of packaging materials. Some firms have demonstrated their ability to respond to environmental concerns with innovative packaging and changes to their processes on a voluntary basis, while improving their competitiveness. The Canadian industry is also concerned about the regulation of packaging on imported products to ensure a level playing field. This was accepted in principle in the development of the Protocol, but its implementation may prove to be more difficult, and domestic producers may be disadvantaged unless the Protocol regulates both Canadian and imported packaging.

THE FOOD RETAILING SECTOR HAS EXPERIENCED INCREASED COMPETITION

There is a significant level of competition in the food retail industry, with retailers trying out new technologies, marketing schemes and products to better satisfy customers' tastes and preferences. A number of demographic trends are expected to continue influencing the food industry, such as:

- ♦ the slowdown in population growth, which affects overall demand,
- ♦ the aging population, which affects the types and packaging of food products,
- ♦ the continuing trend of more married women working outside the home, which creates a demand for convenience foods, extended shopping hours and home delivery,
- ♦ increase ethnic diversity, creates demand for a wider variety of foods, and
- ♦ a greater awareness of health, food safety and environment.

Responding to these trends as well as the environmental pressures of NAPP may be mutually exclusive and will be a major challenge to the retailers.

THE RETAIL SECTOR PLAYS A MAJOR ROLE IN THE SUCCESSFUL IMPLEMENTATION OF NAPP

Increased concentration and market strength of the retail sector allows it to influence the food, beverage and soap/cleaning compound manufacturers to respond to its needs. Large retailers can leverage packaging change through pressure on the food and beverage industry. However, they still must contend with consumer acceptance of change and demands for labelling, convenience, safety, etc., which packaged goods must meet.

The choices and directions of the major retailing chains will trickle down to junior chains and independent food retailers, which themselves do not have a significant influence on manufacturers.

The food retailers can best serve the goals of NAPP through:

- ♦ developing target categories where improvements in products and packaging could be made,
- ♦ private label leadership,

- ♦ supplier encouragement, and
- ♦ providing consumer education/information.

A PRAGMATIC APPROACH ALLOWS INDUSTRY TO RESPOND IN WAYS WHICH RECOGNIZE INDIVIDUAL NEEDS

A national packaging Protocol has to acknowledge the heterogeneity of both the packaging producer and key end-user industries, and therefore the policies must be flexible. A rigid and uncompromising stance will result in a much more difficult, and costly adjustment process, than would otherwise be necessary. Coupled with regulation this type of approach would be most detrimental to industry. This would force a response from the players that could be perceived as unrealistic and therefore fail to generate any support for the Protocol.

THE FOCUS OF PACKAGING WASTE DIVERSION SHOULD BE ON THE COMMERCIAL/ INDUSTRIAL SECTOR

The greatest ability to divert packaging from the waste stream will come at the commercial/industrial point of product distribution stream, not at the post-consumer level. Commercial/industrial packaging and containers account for approximately two-thirds of packaging waste at municipal landfills and due to the greater volumes, types of packaging material involved, (e.g., corrugated containers, wooden pallets, paper sacks, burlap, metal containers, etc.) and a more concentrated user base, the major part of meeting reduction, re-use and recycling targets will come from this segment. Post-consumer packaging is a smaller component of the final waste problem and is comprised of a greater variety of packaging types and materials commingled in residential wastes, as well as having a much greater dispersion of users, making collection and separation a major hurdle to meet the waste diversion target in the post-consumer waste area.

THE ABILITY OF INDUSTRY TO RESPOND WILL VARY BY SECTOR AND BY FIRM

The lack of homogeneity across producer and user industries and sub-sectors, as well as the regional influences on industry creates some difficulty in applying the same standards across the board. Within industry sectors and sub-sectors there will be differences between firms in terms of their ability, both financial and technical, to respond to the Protocol in a uniform manner.

Industries which are characterized by a small number of large enterprise, which account for the bulk of the activity on one hand, and a large number of smaller

firms which account for the remainder will find it difficult to move in tandem. This leads to the "free-rider" problem, which has been mentioned by both leading edge firms and government representatives. Free riders are those firms that will be able to escape notice, in terms of enforcement of the Protocol, through being too small and numerous to regulate. Therefore the larger, more noticeable firms, will be expected to make up the difference to meet the appointed targets.

The depth and breadth of various of product lines will also complicate the adherence to the Protocol's policies, as there are numerous packaging types and materials involved. This diversity affects the ability to apply the 3R's at the consumer level. Some level of standardization would assist the process, but standardization at the consumer level is not popular. It could be more effective to create packaging and container standards at the commercial/industrial level, where there are greater volumes and less packaging applications involved. In addition, at this level packaging is not used as a marketing tool, to the extent that it is at the consumer level.

FINANCIAL AND MARKET VIABILITY OF IMPLEMENTING NAPP ARE CRITICAL

One of the critical issues in terms of implementing NAPP is timing. It must be recognized that industry requires sufficient time to adapt to the new policies, and for government and industry to work out the details and more clearly determine costs. Elements of the Protocol's policies are agreed upon in principle, but the costs and other impacts of implementation remain totally unknown. For example:

- ♦ Assessment of the environmental impact of packaging. In some cases this involves numerous product lines and numerous products within those lines, as well as the production-related industrial packaging.
- ♦ Redesign of packaging identified as being the most detrimental to the environment. Plastic may be detrimental in a landfill, but valued for its energy content in an incinerator; what determines the best redesign response?

To ensure that requirements and expectations are in line, upfront work is required on many facets of each of the implementation aspects of the Protocol to determine their practical limitations, the impacts on all aspects producers and using industries and direct costs.

CONSUMER DEMAND IS THE KEY TO LONG-TERM SUCCESS

The last point on pragmatic implementation is to focus on creating awareness and demand of and for environmentally friendly products at the consumer level. All of

the stakeholders agree that this is a critical success factor, although there is some disagreement as to the current level of consumer awareness/demand, and how much of that translates in sales of products. Industry representatives state that they will meet consumer demand for environmentally friendly products and packaging, however, until now they have not sales of such products have not taken off. This is in part to the consumers confusion over what, exactly, is environmentally friendly or not. A key factor behind the successful implementation of NAPP will be a program which helps consumers make informed choices which will support industry's efforts to provide environmentally friendly packaging and products.

VOLUNTARY COMPLIANCE WILL OPTIMIZE COST EFFECTIVE IMPLEMENTATION

Voluntary actions by industry, coupled with incentives such as environmental tax credits, will result in a far more efficient response to the Protocol. However, it is important that these incentives be seen as more than just a "pat on the back" by industry, but in fact are focused on improving the competitiveness of industry.

However, a legislative framework is proposed, which is flexible enough to allow industry to respond voluntarily in the most efficient way, yet to ensure that there are no "free riders" and that NAPP does not provide a competitive advantage to imports. Secondly, in order to pre-empt a multiplicity of regulations stemming from different levels of government national regulations may create a more even set of rules. For example, a regulatory jumble is already being experienced in the United States, where at least 35 state legislatures are considering more than 250 different bills on plastic disposability and recycling, as are hundreds of counties and municipalities. It is estimated that there are over 800 separate pieces of legislation under consideration by various bodies of government with little consensus on what is the best solution and the best response by industry.

SHORT-TERM TARGETS SHOULD BE USED AS POSITIVE REINFORCEMENT

Industry has expressed its support of the "spirit" and direction of the Protocol, however, cautionary flags have been raised over the implementation of the policies. The Protocol must be sensitive to the constraints and competitive pressures under which Canadian industry operates and thus not place too great a demand in too short a time for the industry to be able to respond. The short term goals should remain attainable so that industry can experience early success and continue towards meeting the longer term goal of 50% diversion from the waste stream.

Another reason to keep short term goals attainable is to allow both the packaging producers and users a chance to change their processes and make the necessary capital investment to meet new product design requirements. It takes approximately

2 years to redesign and produce a new packaging format for a product, therefore targets for 1992 should be kept to those levels that industry feels it could achieve without including a major redesigning process.

ENSURING A LEVEL PLAYING FIELD WILL BE CRITICAL TO THE SUCCESS OF NAPP

A critical issue which will influence compliance with NAPP, is governments' ability to ensure a level playing field, both in terms of the infrastructure with which provinces choose to meet the reduce, reuse and recycle targets as well as ensuring that imports are subject to the same policies.

The infrastructure in place in any province will also impact on the ability of a firm to do business in that province as well as affect the attractiveness of that province as a business location. Industry's main concern regarding "infrastructure of choice", is that it may translate to eventual material bans and require them to sell a product in different packaging in different provinces. In a market the size of Canada, this is not economically feasible.

If imports are not subject to the same and enforced requirements, they will have a competitive advantage. Consultations with government officials have not proven how NAPP can be effectively and legally applied to imports. Until this is resolved, Canadian industry is unanimous in its position that NAPP not be imposed in a way which disadvantages domestic producers and users. It is important to note that many of the companies in the food industry are multinationals, and if the rules and regulation for Canadian-made packaged products are perceived as more stringent than those in their home country, some may switch to importing product from their parent companies in order to maintain their competitiveness. The key to dealing with imports, is that their treatment be decided at the outset of NAPP and be enforced.

In summary, the economic impacts related to the Packaging Protocol cannot be quantified at this stage. Detailed interviews with leading firms in the four major packaging using sectors indicated that each is committed to meeting the Protocol and is putting the organization in place to tackle implementation of NAPP. However, the implementation options are many and varied and depend on decisions on infrastructure, which are in the hands of governments. Moreover, the response to NAPP must be developed in the context of increasing competitive pressures which are reshaping both packaging producers and users, and while some "shake-outs" will occur, it is unlikely that NAPP alone will cause businesses to close.

INTRODUCTION AND STUDY BACKGROUND

This report was prepared as a background document to the development of the National Packaging Protocol (NAPP). The assessment of economic considerations to implement the Protocol was identified, in the Phase I study, as one of the key issues to be addressed.

The objective of the Canadian Council of Ministers of the Environment (CCME) is the overall reduction in waste generation of 50% over 1988 levels by the year 2000. Related specifically to NAPP, it requires that 50% of packaging in the waste management stream be diverted from landfill by the year 2000, using, primarily, reduction, reuse and recycling, the "3R's". (However, it is not clear whether this reduction rate is to be based on a per capita level of 1988 solid waste or on the total volume of waste).

1.1

OBJECTIVES OF THIS REPORT

The objective of this report is to identify and discuss the economic considerations that will play a key role in implementing the six policies which comprise NAPP. The focus of this report is to identify features about the packaging sector and packaging using industries which will facilitate or pose difficulties in implementing NAPP. As noted in the preface, this is one of a series of reports and these other NAPP reports should be consulted for details which affect implementation of the Protocol.

NAPP is a set of six policies aimed at reducing solid waste generated by packaging. These are:

1. All packaging shall have minimal effects on the environment.

2. Priority will be given to the management of packaging through source reduction, reuse and recycling.
3. A continuing campaign of information and education will be undertaken to make all Canadians aware of the function and environmental impacts of packaging.
4. These policies will apply to all packaging used in Canada, including imports.
5. Regulations will be implemented as necessary to achieve compliance with these policies.
6. All government policies and practices affecting packaging will be consistent with these national policies.

The specific requirements of industry to meet the NAPP objectives are still largely lacking in precision primarily because there is no single best way to approach this complex issue. Because of the wide variety of packaging types, uses and user needs, it was agreed that individual firms would look at their overall generation of packaging waste to determine the most cost-effective ways to meet the NAPP objectives. Simply put, what works well for one firm may not for another. The "voluntary" compliance approach is meant to provide business with the flexibility to determine how best to reduce packaging wastes, since the methods will also vary across the provinces based on each province's preferred waste management strategy.

Individual companies and industry associations in the four major packaging-using sectors (food, beverage, chemicals and paper) have indicated the need for specific guidelines to assist industry to determine the best ways to reduce packaging waste and to develop new packages. Moreover, industry has stressed the importance of establishing a strong consumer desire and acceptance for products and packaging that contribute to responsible solid waste solutions (GPMC, January, 1990).

As a result, at this stage, it is not possible to quantify the costs of adopting and implementing the NAPP policies and their economic impact in terms of jobs, growth, income, etc. This report therefore identifies the economic factors on an industry and regional basis which should be considered and will affect the overall economic impact of NAPP implementation.

1.2

APPROACH AND METHODOLOGY

Our approach to this study includes both qualitative and quantitative analysis. Three industry groups were identified as the key players in terms of NAPP's impact, these were:

- ♦ the packaging producers, segmented by material type,
- ♦ major packaging users, mostly the food and beverage industry and the chemical and chemical compounds industry, which account for over 70% of the value of packaging used, and
- ♦ the retailers, who have a significant influence on the products which reach the consumer.

The industry sectors were profiled in terms of their structure, ownership, performance and relative strengths and weaknesses. Their competitiveness relative to U.S. industry was evaluated, particularly in light of the changes in trade practices and regulations, stemming from the Canada-U.S. Trade Agreement (CUSTA) and GATT. The purpose of this analysis was to identify the overall economic health of these industries and have a benchmark from which to assess the implications of further changes to their business environment as brought about by NAPP.

The background information for this part of the work was accessed primarily from published sources including Statistics Canada, Department of Industry, Science and Technology, as well as trade publications, as well as our in-house data.

However, in order to assess the economic implications of NAPP, NAPP first had to be created and refined to a near final form. The actual work on this report could not start until a draft Protocol had been developed. There had been input through the entire process on the direction and potential effect of NAPP, initially from the consulting team and then when the document was in a more complete form, incorporating the Task Force's comments and those made at the regional workshops. The review of the economic implications has thus been an ongoing process, which identifies the sensitivities of the various industry groups to the proposed policies.

Industry representatives and associations in the major packaging user sectors were also contacted to determine how firms are responding to

NAPP in terms of packaging redesign and materials targeted for each of the 3R's. The responses indicated that practical implementation of the Protocol must account for the individual firm's operations since there is no single best solution. It is therefore not possible to generalize the outcome of NAPP in terms of changes in packaging types.

1.3

ORGANIZATION OF THIS REPORT

This report is organized into six chapters, including the introduction. Chapters 2 through 4 profile the industry sectors which will feel the greatest impact from the Protocol - packaging producers, users and retailers - and provides an assessment of their overall ability to respond to the requirements of NAPP.

The economic implications of NAPP are discussed in Chapter 5 in terms of industries' ability to respond, what are some of the potentially difficult areas and how should the Protocol approach them. Chapter 6 discusses other economic activity which may be generated through the implementation of NAPP, taking into consideration both forward and backward linked activities.

2.0

THE PACKAGING INDUSTRY IS COMPRISED OF DIVERSE SECTORS

This chapter of the report provides an overview of the main sectors producing packaging in order to understand their market and competitive position and the other pressures they face in addition to NAPP's thrust to reduce packaging materials in the waste stream.

EXHIBIT 1
EMPLOYMENT IN THE PACKAGING INDUSTRY
1986

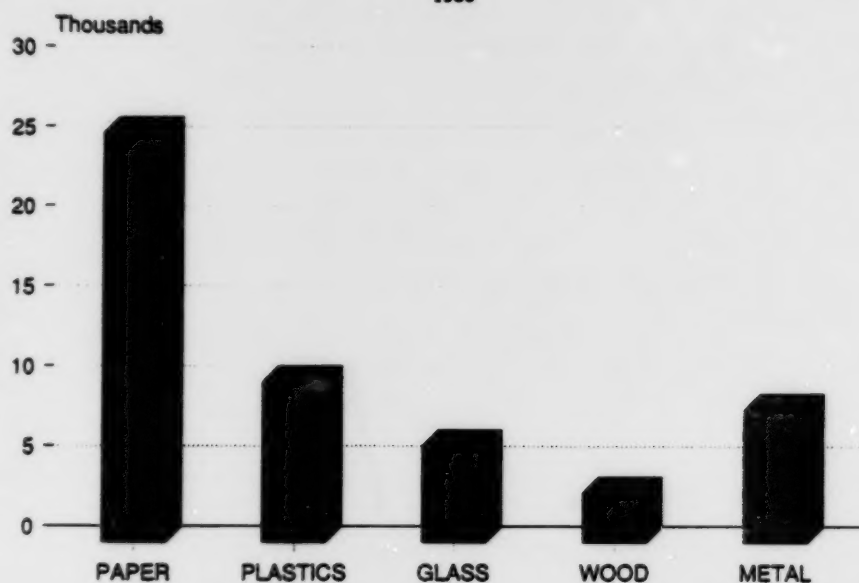


EXHIBIT 2
SHIPMENTS BY THE PACKAGING INDUSTRY
IN CANADA
1986



Source: Statistics Canada Cat. No. 31-203

2.1

THE PACKAGING INDUSTRY IS COMPRISED OF A NUMBER OF DIVERSE SECTORS

The packaging industry is comprised of a number of diverse material sectors, notably paper, glass, plastic, metals and wood. Each of these sectors has different characteristics in terms of overall production, labour to capital ratios, regional distribution, ownership, structure and trade sensitivity (see Exhibits 1 and 2). Appendix I contains summary sector profiles based on 1986 Statistics Canada data (latest available) which identify the major firms and their regional distribution of facilities and employment.

There are wide variations among the sectors in the packaging industry in terms of industry trends and performance. The differences in the financial health of these industries will determine how NAPP will ultimately affect them.

PAPER PACKAGING

The paper packaging sector is comprised of:

- ♦ Kraft Paper
- ♦ Container Board
- ♦ Corrugated Boxes
- ♦ Folding Cartons
- ♦ Converted Paper Packaging

This industry is mature, with growth for its products ranging from 1% to 3% per year. Financially, the industry is characterized by low margins and low profits, which negatively affect the rate of capital

accumulation. This limits the ability of firms in this sector to undertake capital improvements.

Many of the products produced by this sector are considered commodities and therefore trade on the basis of price. Currently, the market for these products is soft with intense price competition. However, since the margins are already squeezed, this industry sector does not have much manoeuvrability in protecting its market by lowering price.

The paper packaging sector also suffers from a number of competitive disadvantages, relative to producers in the United States and other competing countries (Sweden, Norway), such as:

- ♦ significant levels of excess capacity,
- ♦ older plants/equipment in some regions,
- ♦ fragmented production runs,
- ♦ regional disparity between the efficiency of western and eastern Canadian mills,
- ♦ higher raw material and labour component costs, and
- ♦ transportation costs to export markets.

Paper-based packaging products already use a significant proportion of recycled fibre. Boxboard used 93.2 lbs. of waste paper fibre (i.e.,

corrugated, newspaper, etc.) per 100 lbs. of product. Corrugated medium and linerboard were lower, at 28.7 lbs. and 24.4 lbs. of wastepaper per 100 lbs. of product, respectively. Interviews with producers of these products indicated that they have a sufficient supply of secondary fibre and this could increase if provincial recycling programs start collecting boxboard. They also have indicated that contaminants in post-consumer paper-based packaging present problems in the recycling process.

PLASTIC PACKAGING

The plastics sector has experienced steady growth over the past 15 years based on increased sophistication in the manufacturing process and the increased acceptance of plastic packaging products as substitutes for other packaging. The improved production efficiencies have helped this sector to keep prices steady and continue expanding.

The key competitive factors are the cost of raw materials (resins), labour, transportation/distribution, scale and resulting efficiencies, and the possession of proprietary processes or designs. Canadian resin suppliers tend to maintain their domestic resin prices at U.S. prices, plus some margin which reflects the Canadian duty on imports. This puts the products manufacturers at a relative cost disadvantage, particularly when trying to export to the United States. Canadian manufacturers also suffer poor scale efficiencies, but are competitive in producing short run, niche market products.

GLASS PACKAGING

Consumers' Glass is Canada's dominant producer of glass containers with 8 plants; it is the only company which recycles glass into new

containers. Free trade and a high dollar have provided users of glass containers with the option to source their packaging from the U.S. As a result, Consumers' sales have suffered, yet the company is recycling cullet from imported glass containers.

Glass containers have averted decline, starting with the beer industry's change to long neck bottles in 1984. New market niches such as single serve fruit juice bottles and the increased use of glass for "premium products" have helped support sales. However, this is a mature industry which is capital intensive and thus depends on re-investment in new equipment to improve productivity. Current (mid-1990) high interest rates are an impediment to this re-investment.

Canadian glass container manufacturers are at a cost disadvantage to their U.S. counterparts as raw material prices tend to be higher and competition, up until now, has been limited by existing tariffs. Since 1988, Canada's major producer of glass containers has suffered losses. U.S. producers also have a competitive advantage in producing long-run, mass market items as this type of production capitalizes on their larger economies of scale. Canadian producers are more competitive in low volume production items as they have smaller machines that are more conducive to line changes.

METALS PACKAGING

Metal containers are either steel (tinplate) or aluminum. The industry has three major players which account for 90% of shipments in Canada. The larger plants produce low margin, high volume, standard-sized goods, while smaller plants tend to produce products at the opposite end of the spectrum. The growth in this industry has

been modest, but steady. The change from a three-piece can to a two-piece can has had a marked influence on this sector. There has been an increase in investment of approximately \$260 million since 1982, particularly in the two-piece high speed can lines by the larger companies. This move has increased output by 20%, employment by 7%, number of establishments 32% and enhanced productivity by 11%. Nonetheless, there are still some lines which need to be modernized.

The industry is strongly affected by transportation costs and by the relationships between Canadian and U.S. parent or former parent companies. Input prices and labour costs are competitive with the U.S., however Canadian firms are disadvantaged by smaller scale, higher overhead and lower productivity.

2.2

ANY MEASURES WHICH REDUCE THE PACKAGING INDUSTRY'S PRICE COMPETITIVENESS WILL RESULT IN INCREASED LEVELS OF IMPORT PENETRATION

The packaging industry in Canada sells almost all its production in the domestic market, with only some segments of the paper-based packaging sector exporting a significant portion of their shipments. Kraft paper and containerboard are the segments with the highest export orientation, 46% and 31% respectively (as a per cent of shipments), while folding cartons and corrugated boxes have the lowest export orientation.

Up until now tariffs have played an important role protecting the domestic market, tariffs into the U.S. have generally been lower, but Canadian product cannot compete on price in that market since both its raw material, labour and interest costs are higher than their U.S. counterparts.

- ♦ Canadian duty on glass containers is 9.2% to be phased out over 10 years. The U.S. duty was phased out as of January 1, 1987. There are no non-tariffs barriers constraining the export or import of glass containers. Under CUSTA, the duty on glass containers and soda ash (an input to glass making) will also be phased out over 10 years. American competition in Canada is likely to increase as a result of this phase-out of tariffs. The U.S. glass container industry has seen the emergence of two giant glass container companies resulting from mergers and buy-outs in recent years. These giants, Owens-Illinois and Anchor (which are respectively 6 times and 3 times the size of Consumers' Glass), together control nearly two-thirds of the U.S. market and can be expected to increase pricing pressures in the high-volume lines in Canada.

- ♦ Tariffs on kraft paper are not prohibitive to trade, either in the U.S. or Canada, ranging between 2% and 9.23% in Canada and 2% to 4.3% in the U.S. Under CUSTA, the existing tariffs for specialty-grade kraft papers will be phased out in five instalments and there are no non-tariff barriers distorting trade. Therefore, since the majority of kraft papers move between Canada and the U.S. without tariffs or non-tariff barriers, the CUSTA is not expected to have a major impact. Mills in eastern Canada, which concentrate on the domestic market, primarily in grocery-bag grades, will face continuing low prices due to competition from low-cost U.S. producers.

- ♦ Tariffs for containerboard (linerboard and corrugated medium) are generally low in both Canada (4% and 6.5%) and the U.S. (4% and duty-free), and will be phased out over the next five years. Transportation costs limit exports to Europe, but Canadian products can compete in U.S. markets. The CUSTA is expected to have adverse effects on containerboard producers in eastern Canada. Many producers are high cost due to older plants and without tariffs are uncompetitive.
- ♦ As with most converted paper, the corrugated container industry is also domestically oriented and its markets have developed behind the protection of a relatively high tariff (9.2% into Canada, while the U.S. tariff is only 2.8%). The CUSTA will eliminate the tariffs on corrugated containers, together with those on raw materials in five equal stages, which started as of January of this year. It is likely that the industry will suffer some loss of market share to lower cost imports from producers in border states. If the import threat is to be minimized then producers will have to be free to source their raw material requirements from lower cost U.S. mills.
- ♦ In the metal container industry, trade is relatively a small factor. In Canada tariffs range between 8% to 10.2% while in the U.S. they range from zero to 5.7%. Under the CUSTA, tariffs will be eliminated over the next 10 years. During this adjustment period continued modernization and rationalization of production lines could narrow the productivity gap for most products between Canada and the United States. Also, the

relatively high cost of transportation relative to price will protect the Canadian market to some extent.

- ◆ In the plastics sector, tariffs range from 8% to nearly 14%. This present level of protection and the existing favourable rate of exchange are major factors which have allowed the plastics industry to retain a significant share of the domestic market. The tariffs will be phased out over a ten year period. As freer trade is realized, the prices of many basic raw materials should move towards parity with the U.S., however other costs (manufacturing, distribution, etc.) will move to parity more slowly, leaving the Canadian industry open to the threat of increasing imports.

2.3

THE ECONOMIC CYCLE AND ITS IMPACT ON INTEREST AND EXCHANGE RATES MUST BE CONSIDERED

Many of the sectors in the packaging industry depend on the relative value of the Canadian dollar vis-a-vis the U.S. dollar. For example:

- ◆ Currency exchange rates have a major effect on the competitive position of kraft paper and containerboard producers. Before 1980, costs of production at western Canadian mills were lower than those of their Scandinavian competitors. The devaluation of Scandinavian currencies in the early 1980's completely reversed this competitive position, which lasted until late 1985. Since then, Scandinavian currencies have strengthened against the Canadian dollar, and inflation has been much higher there. As a result, western Canadian mills are again competitive on both the European Community and Asian markets.

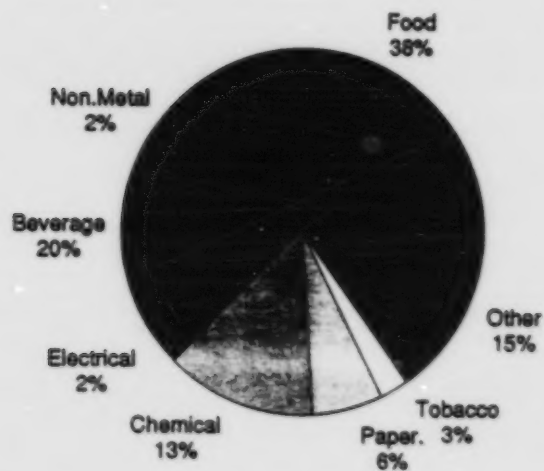
- ♦ Currency exchange rates have a significant impact on the position of Canadian producers of converted paper products in relation to their U.S. competitors. A Canadian dollar exchange rate in the range of \$0.80 to \$0.85 allows Canadian producers to be cost competitive in the U.S. market. This position is eroded as the Canadian dollar has moved above the \$0.85 level beginning in 1989.
- ♦ The exchange rate has also been an important factor favouring Canadian carton producers against U.S. penetration of the domestic market. Nevertheless, U.S. producers can and do overcome that protection from time to time and penetrate the Canadian market using pricing techniques that may not always reflect costs.
- ♦ High interest rates have been sustained in Canada throughout 1989 and 1990 as the Bank of Canada has been using interest rates to fight inflation. By mid-1990, real interest rates in Canada and the U.S. diverged significantly, putting Canadian manufacturers at a disadvantage.

2.4

THE PROTOCOL MUST TAKE INTO CONSIDERATION THE PACKAGING INDUSTRY'S ABILITY TO RESPOND TO ITS OBJECTIVES AND TARGETS

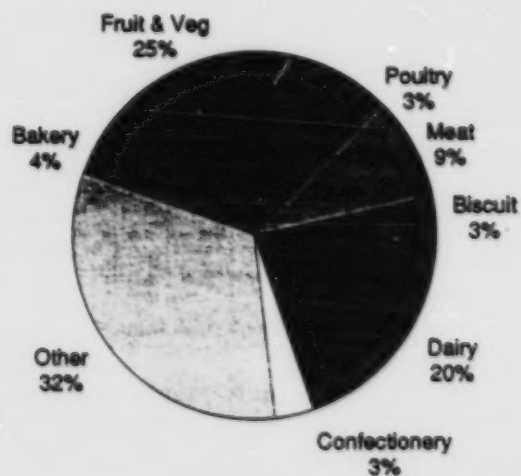
The packaging industry's ability to meet NAPP objectives is influenced to a large extent by the packaging user industries. The major packaging users, such as the food and beverage industry, create the demand which in turn drives and supports the packaging manufacturers. The packaging users are also responsive to consumer

EXHIBIT 3
CONSUMPTION OF PACKAGING BY INDUSTRY
1986



Based on \$ value

EXHIBIT 4
USE OF PACKAGING BY FOOD INDUSTRY
1986



Based on \$ value

Source: Statistics Canada Cat. No. 31-212

and retailer demands. Therefore, both the packaging producer and the main user industries must work together to implement NAPP.

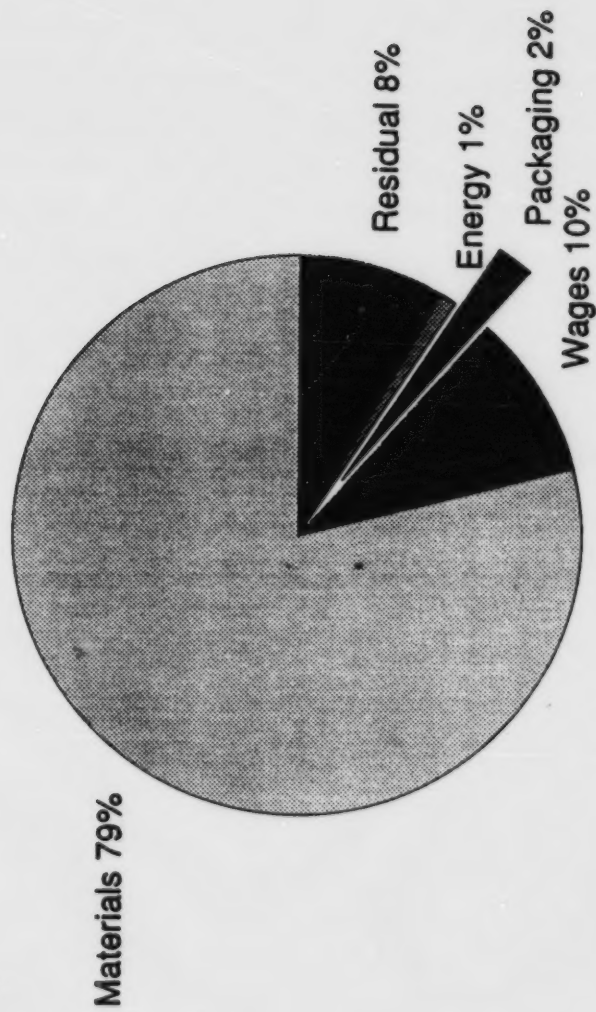
The impetus for change will have to come from the key user industries, who in turn are influenced by the retailer and ultimately the consumer. In light of increasing trade-driven competitive pressures, both the packaging user and producer industries will have to respond with products and packaging which will answer the market's demand.

3.0

THE COMPETITIVENESS OF THE KEY PACKAGING USER INDUSTRIES AND ITS ABILITY TO INFLUENCE PACKAGING CHOICE NEEDS TO BE CONSIDERED IN IMPLEMENTING NAPP

It is important to consider the performance trends of the industries which are significant users of packaging products, as they have a major impact on the "robustness" of the packaging industry and hence its ability to make major changes in response to NAPP. One of the most important and largest user-industries is the food and beverage products sector. It consumes nearly 90% of glass containers and between one-third to one-half of other packaging products such as metal cans, folding boxes, corrugated cartons and plastic products. Other important packaging using industries include pharmaceuticals, health and beauty products and other chemical products, most of which are covered by the industry classification of "chemical and chemical compounds industries". Statistics Canada data indicate that the food, beverage and chemical products industries together account for over 60% of the value of all packaging used (Exhibit 3).

EXHIBIT 5
SIGNIFICANCE OF PACKAGING
MEAT INDUSTRY 1986



Based on \$ value

Source: Statistics Canada Cat. No. 32-250

3.1

THE FOOD INDUSTRY AND SOME SECTORS OF THE BEVERAGE INDUSTRY FACE SIGNIFICANT COMPETITIVE PRESSURES

The food and beverage industry in Canada is facing increasing competitive pressures stemming from the Canada-U.S. Trade Agreement and the direction in which the Uruguay Round of the GATT negotiations is heading. Increasing bi-lateral and multi-lateral trade will likely have adverse impacts on the food and beverage industry, and consequently on the packaging industry. The following sub-sections profile the key sectors of the food processing industry, which are also the larger users of packaging (Exhibit 4).

THE FOOD INDUSTRY**MEAT AND MEAT PRODUCTS INDUSTRY**

The meat and meat products sector is one of the largest employers in the food industry, with shipments of nearly \$9 billion in 1986. The meat and meat products industry sector also accounts for approximately 10% of the food industry's consumption of packaging. However, as a proportion of the total value of production, packaging is fairly low, at about 2.2 per cent (Exhibit 5).

The meat and meat products industry is characterized by corporate concentration, as the four largest firms accounted for approximately 55% of shipments in 1986. Foreign ownership of this sector had bottomed out at about 5% of production, however the fairly recent entry of a U.S. firm, into the Canadian market, would have changed those figures to some degree. This is a nation wide industry, with a major presence in most regions, but a heavier concentration is found in Quebec, Ontario and Alberta.

The major meat companies are mature, and most of them are considered financially stable, despite the poor operating results experienced in 1989. In response to the relatively low rate of return on their investments, many companies are attempting to diversify, both within and outside the sector. Most of the firms are privately held and very little financial data is available, however, based on common industry knowledge, net profits tend to be around one per cent.

Until 1989, the Canadian meat and meat products industry enjoyed a fairly robust performance, relying on its main strengths, including:

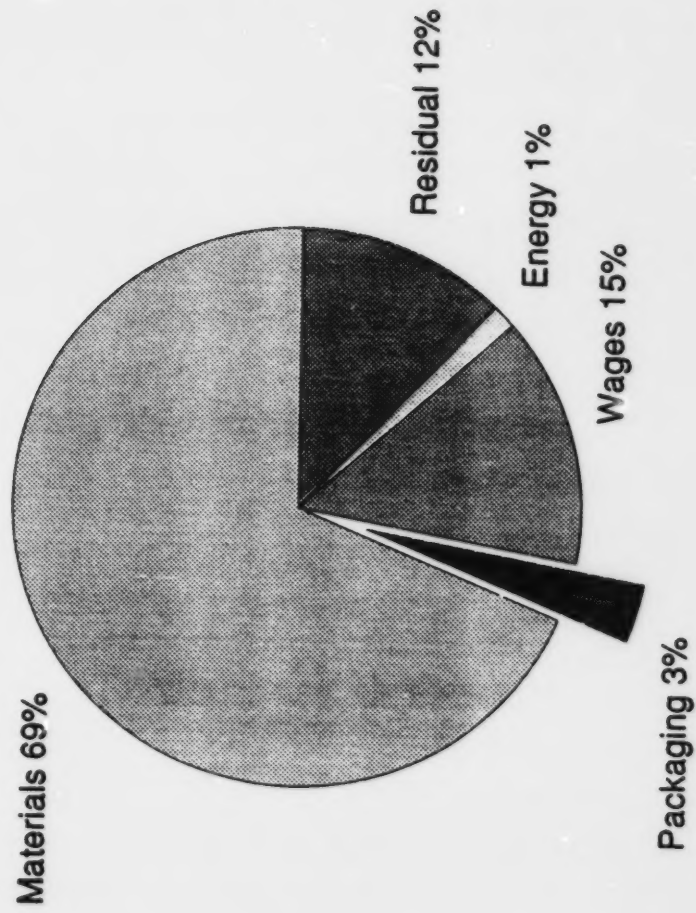
- ♦ reliable supplies of high quality livestock,
- ♦ reasonably competitive prices/markets for securing supply,
- ♦ an internationally respected quality control system and inspection system,
- ♦ enough plants to ensure a good supply to regional and niche markets.

However, the Canadian meat industry also suffers from a number of weaknesses. When compared to the American industry, which is closest to it in structure and basic economics, all segments of Canada's industry are affected by a number of potentially negative factors.

These factors include:

- ♦ a degree of overcapacity,

EXHIBIT 6
SIGNIFICANCE OF PACKAGING
POULTRY INDUSTRY 1986



Based on \$ value

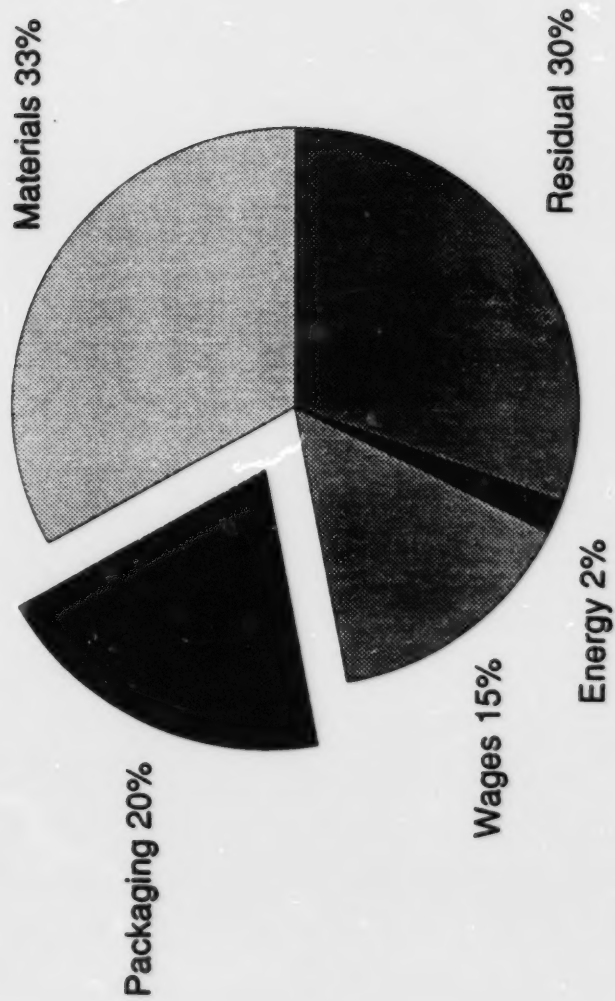
Source: Statistics Canada Cat. No. 32-250

- ♦ an underdeveloped international marketing network,
- ♦ out of date plants and equipment,
- ♦ a wage and productivity gap, and
- ♦ a capital replenishment problem.

Despite these weaknesses, it was believed by industry analysts that the Canadian meat and meat products sector compete effectively with the U.S., and that the Trade Agreement between the two countries would be of benefit. However, the past twelve to eighteen months have seen the industry undergo significant turmoil. In the hog industry, major firms are in a weakened financial position and the beef industry has been thrown-off equilibrium by the entrance of a large U.S. player into the western Canadian market. It appears that over the short term there could be a major shakeout or reorganization of the players in this industry.

In the poultry processing sector, packaging accounts for 3% of production costs (Exhibit 6). This poultry industry is controlled by a supply management system reflected in the high cost of materials and therefore international trade has only a limited influence on this industry. The foreign ownership of the industry is fairly low, around 5% and the concentration is not as great as in other food sectors, as the four top firms account for 36% of domestic shipments. This industry has experienced growth in capacity over the past several years to meet the growing demand from both the food service sector and the consumer for both fresh chicken and convenience chicken products, such as nuggets, dinners, fingers, etc.

EXHIBIT 7
SIGNIFICANCE OF PACKAGING
FRUIT & VEGETABLE INDUSTRY



Based on \$ value

Source: Statistics Canada Cat. No. 32-250

The poultry processing industry has performed well in recent years due to:

- ♦ increase in market demand,
- ♦ protected market share (by supply management board),
- ♦ efficient processing equipment, and
- ♦ reliable labour force and good management.

Within the context of a relatively closed domestic market, the industry enjoys certain strengths, such as;

- ♦ effective capacity utilization rates,
- ♦ investment in new technology and processing equipment, and
- ♦ limited competition from imports.

However, since most Canadian firms are geared to supplying regional markets they do not have the economies of scale to make them competitive with their U.S. counterparts. Therefore the future competitiveness of this industry, under CUSTA or GATT will largely depend on changes to the supply-management regimes to move to a comparative advantage system and lower input costs.

FRUIT AND VEGETABLE PROCESSING INDUSTRY

The fruit and vegetable processing industry in Canada includes both canners and processors of frozen products. This industry sector as a whole accounts for nearly 25% of the food industry's packaging consumption. In terms of the total value of production, packaging accounts for nearly 20%, compared to labour which accounts for about 15% (Exhibit 7).

The standard products of this industry include canned fruits and vegetables, such as apples, peas, corn, beans, etc., frozen fruits and vegetables and many firms are also involved in manufacturing higher value products such as soups, sauces and prepared meals. Canning is the larger segment, accounting for approximately 70% to 75% of the industry's shipments.

There is a strong degree of foreign ownership in this industry, with about 45% of the industry (based on shipments) controlled by foreign interests. The high degree of foreign ownership is largely the result of the establishment by multinational enterprises of subsidiary businesses in Canada, due to the country's tariff protection for this industry.

The two industry sub-sectors are structured very differently, with the major characteristics of canning being:

- ♦ dominated by few large firms, which operate chiefly in Ontario,
- ♦ small to medium sized firms operate close to other key growing areas, such as Quebec and British Columbia, some of these firms operate only on a seasonal basis,
- ♦ many companies are the subsidiaries of U.S. multinationals,
- ♦ generally produce national brand name products, and supply them on a national basis,
- ♦ some companies do both canning and freezing,

- ♦ the firms are geared to handle peak loads at harvest time, and therefore are under utilized for the remainder of the year, and
- ♦ high degree of concentration, with seven firms accounting for approximately 45% of shipments.

The frozen products sector is characterized by:

- ♦ higher degree of domestic ownership,
- ♦ larger operations distributed over a wider region of Canada,
- ♦ high degree of concentration, with the four largest firms controlling 75% of shipments,
- ♦ operations generally more modern than those of canning sector, and
- ♦ better year-round capacity utilization due to ability to process imported fruit juice concentrates and ready to serve complete meals.

Overall performance in this industry sector has weakened due to consumers' preference for fresh product. Internal to the industry, the canning sector is losing ground to the frozen sector as well. This industry has traditionally experienced a large trade deficit, in order to satisfy the consumer's demand for products which are not produced domestically.

The major influencing factors on this industry are:

- ♦ the presence of marketing boards which generally result in higher raw material prices,
- ♦ climatic conditions which impact on the growing season and cost of production,
- ♦ transportation costs which define market area, and
- ♦ plant size, which does not offer the same economies of scale as enjoyed by U.S. counterparts.

Under current market conditions the canning sub-sector will face considerable pressure from U.S. suppliers, particularly in the commodity product market. Multinationals will have an option to source commodity goods from their low cost U.S. plants and import products from U.S. plants for sale in Canada under their brand names. The frozen food sector is generally more insulated from U.S. competition due to higher transportation costs for frozen product and their overall efficiency compared to plants south of the border.

The outlook is less clear for the manufacture of further-processed, value-added products such as prepared meals. This will depend on the ability to source competitively priced inputs and the ability of individual firms to compete in a North American market. In this product area, multinationals will also have some flexibility as to

whether they will manufacture these products north or south of the border.

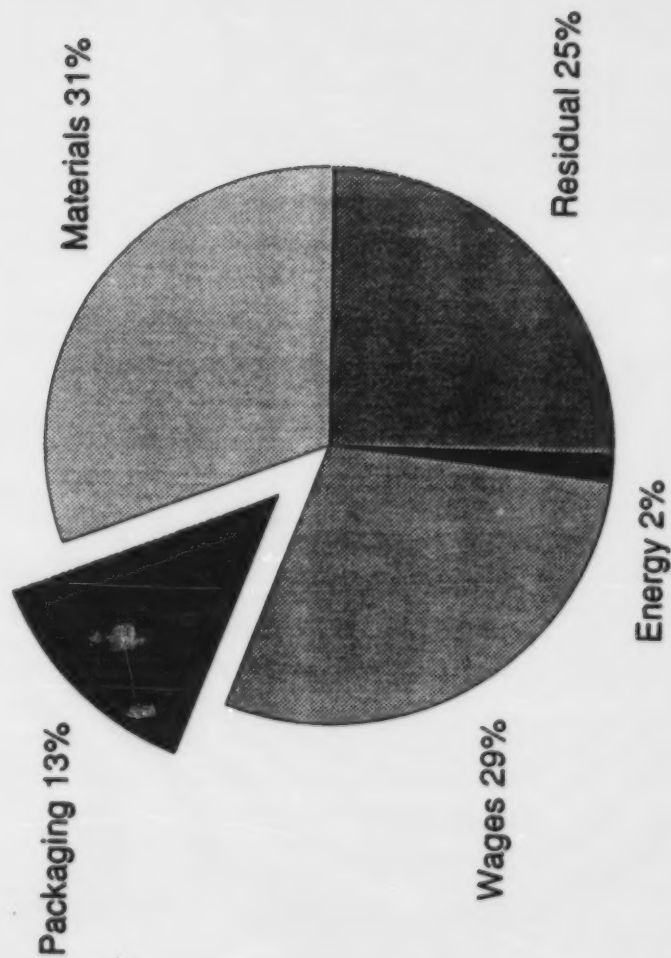
BAKERY PRODUCTS AND BISCUIT MANUFACTURERS

The biscuit industry product's are primarily sweetened and unsweetened biscuits, such as cookies, crackers and other dry baked goods. Concentration and foreign ownership levels in the industry are high, and greatly exceed the average for the food and beverage group because of the dominant position of one foreign multinational. The four largest firms account for 85% of shipments in Canada.

The bakery industry is divided into two sub-sectors, wholesale bakeries and retail bakeries. Both are engaged in baking bread, rolls, cakes, pies, pastries, etc. Wholesale bakeries also include firms which produce frozen, pre-mixed doughs and frozen, pre-formed products. This sector produces the volume products, such as sliced bread to retailers and food service businesses. It includes captive distribution facilities, trucking and warehousing operations. Wholesale bakery establishments are located all across the country, sized to the regional markets. This sector generally has low concentration levels, with the four largest firms accounting for only 30% of domestic shipments. Foreign ownership is not a major factor.

The biscuit and bakery industries together account for about 8% of the packaging used by the food industry. However, taken as a proportion of the overall cost of production for these industries packaging becomes a more significant component, particularly for the biscuit industry. Packaging is estimated to account for as much as 20% of the biscuit industry's cost of production (or about 14% of the

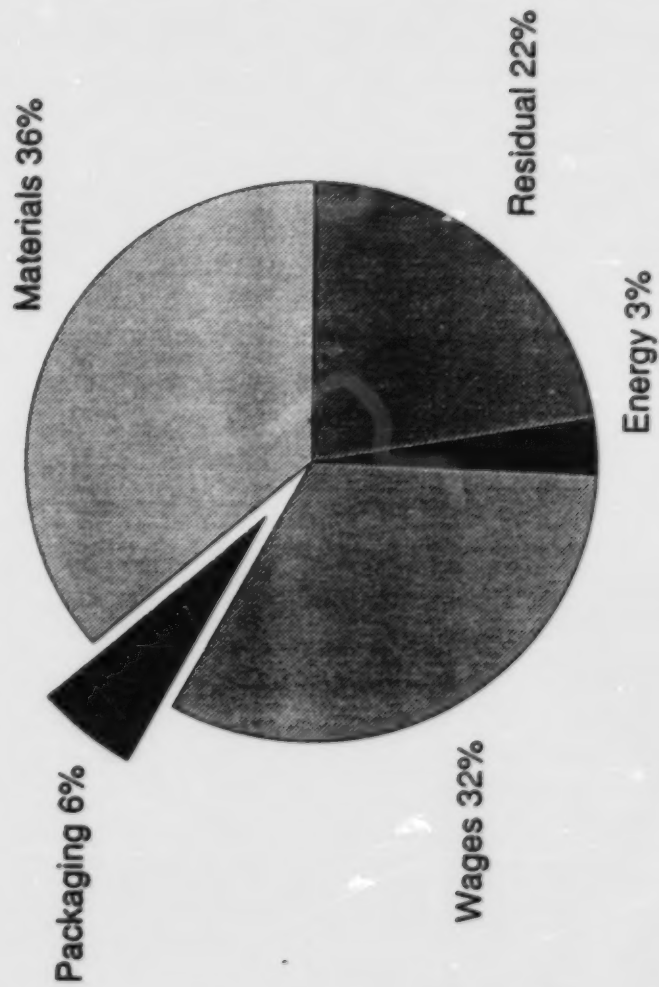
EXHIBIT 8
SIGNIFICANCE OF PACKAGING
BISCUIT INDUSTRY



Based on \$ value

Source: Statistics Canada Cat. No. 32-250

EXHIBIT 9
SIGNIFICANCE OF PACKAGING
BAKERY INDUSTRY



Based on \$ value

Source: Statistics Canada Cat. No. 32-250

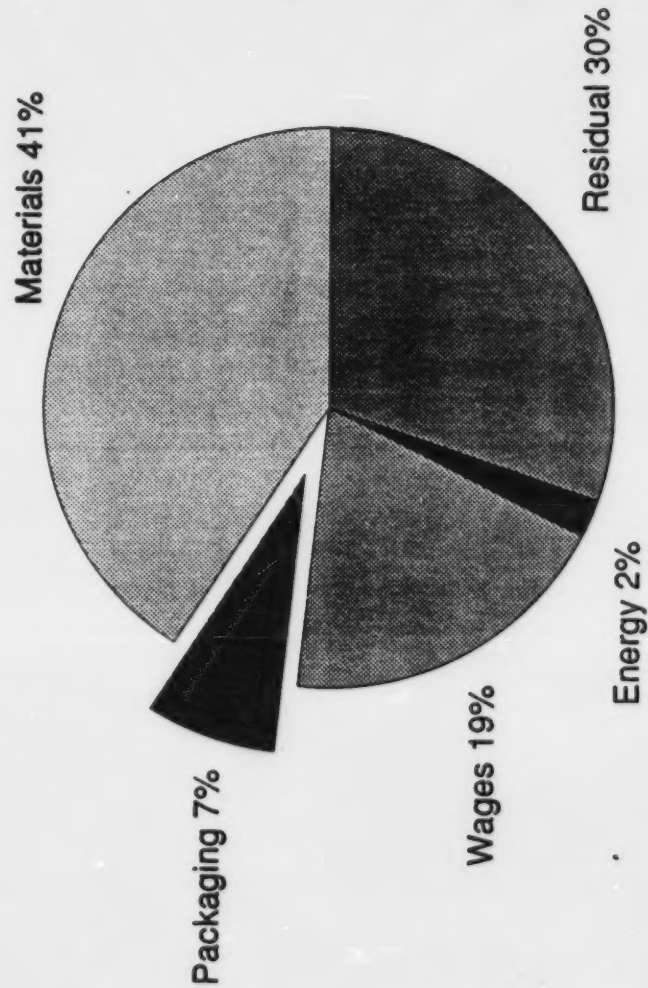
total value of production), it is somewhat less in the bakery sector where packaging accounts for 6% of the total value of production (see Exhibits 8 and 9).

In the biscuit industry a number of mergers over the past few years has resulted in plants with greater economies of scale. However, compared to U.S. operations most Canadian plants are small and less capital intensive. Canadian plants have some advantages in the cost of sugar and lower wage rates. These are offset by the U.S. advantage in dairy input costs which are subject to a supply management system in Canada, and higher productivity. The Canadian market is also slightly differentiated from the U.S. market through subtle taste preferences.

The structure and market coverage of the bakery industry is defined to a large extent by the perishable nature of the products it offers, and the associated transportation costs. The tariff protection for this industry has been minimal, and under CUSTA all tariffs will be eliminated over a ten year period, however, it is not expected to have a significant impact on the bakery industry.

The major problem facing this industry is the declining demand and the shift in consumption patterns. This is caused by the slower population growth, new ethnic niche markets and the consumer nutritional concerns. There has also been a demonstrated preference for fresh over-the-counter goods. This can eventually lead to significant over-capacity problems in the industry, which leads to lower profits and makes it difficult for firms to invest in new plants and modern equipment, thereby limiting the improvement of productivity.

EXHIBIT 10
SIGNIFICANCE OF PACKAGING
SUGAR AND CONFECTIONERY INDUSTRY



Based on \$ value

Source: Statistics Canada Cat. No. 32-250

Under CUSTA, which will phase out tariffs on biscuits over a ten year period, the biscuit industry is expected to remain competitive, although there may be an additional squeeze on profit margins.

CONFECTIONERY INDUSTRY

This industry is comprised manufactures of all type of sugar confectionery, chocolates and other cocoa-based products, as well as the producers of chewing gum. This industry uses approximately 4% of all packaging used in the food industry, however, internally packaging account for about 8% of the total value of production (Exhibit 10).

Imports are a significant factor in this industry, accounting for approximately 30% of the Canadian market. Exports have been increasing from 7.4% of domestic shipments in 1981 to 16.7% in 1986. The industry is heavily concentrated in Ontario and Quebec, which together account for over 90% of shipments. Foreign ownership is relatively high as multinationals have a major position in the industry. Approximately 60% of industry shipments are from foreign-controlled Canadian enterprises.

With capacity utilization estimated at 65% and a declining market there has been considerable re-structuring activity due to acquisitions. The industry is influenced by:

- ♦ the cost of raw materials, which are generally bought on the world market (sugar, cocoa) and can be volatile,

- ♦ the exchange rate which impacts the cost of raw materials (as world markets operates on the U.S.\$), and the attractiveness of exports to the U.S., and
- ♦ product promotion and advertising, which are considerable costs given the nature of the product.

The Canadian industry has generally been protected by relatively high tariff barriers. CUSTA will phase out all tariffs on confectionary products over a ten year period, however there is some concern over whether or not Canadian confectionary products will be affected by U.S. import quotas on sugar containing products. The industry must increase its productivity to compete with imports and increase its export sales in light of a declining domestic market.

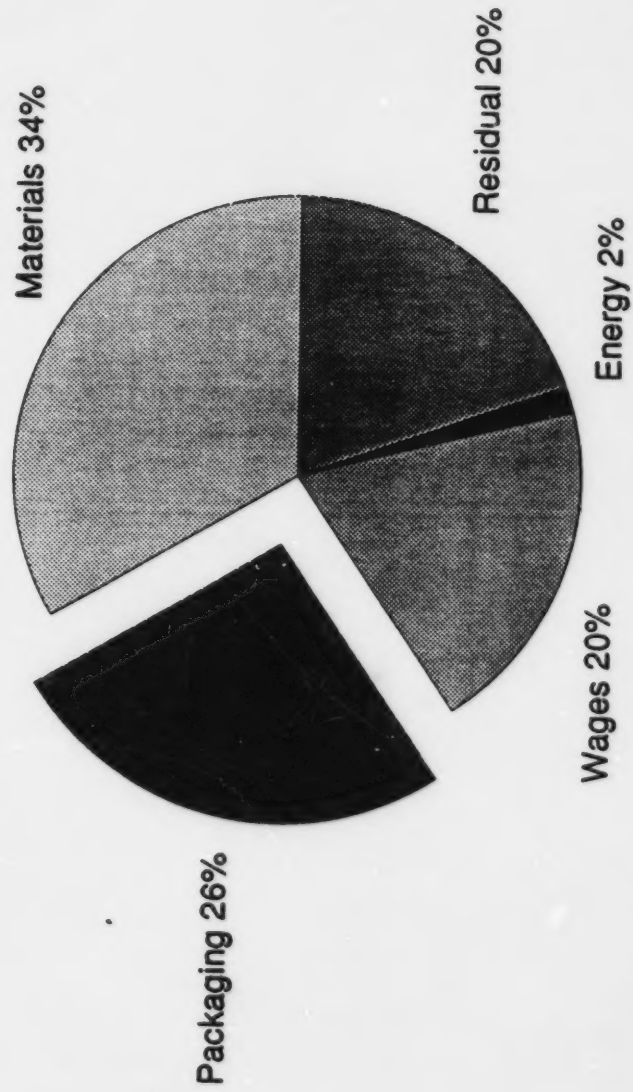
THE BEVERAGE INDUSTRY

The beverage industry is, to a large extent, in the same position as the food industry. There are trade-related competitive pressures from both CUSTA and GATT, particularly on the alcoholic beverages. Soft drink manufacturers are faced with more intra-industry competition.

SOFT DRINK INDUSTRY

The manufacture and distribution of carbonated soft drinks in Canada are based on a franchise system which characterizes the soft drink industry worldwide. The system provides a soft drink bottler with a defined market area and exclusive manufacturing and distribution rights within that area. The bottler is restricted to purchasing the proprietary formula concentrates and syrups from a single source, the

EXHIBIT 11
SIGNIFICANCE OF PACKAGING
SOFT DRINK INDUSTRY



Based on \$ value

Source: Statistics Canada Cat. No. 32-251

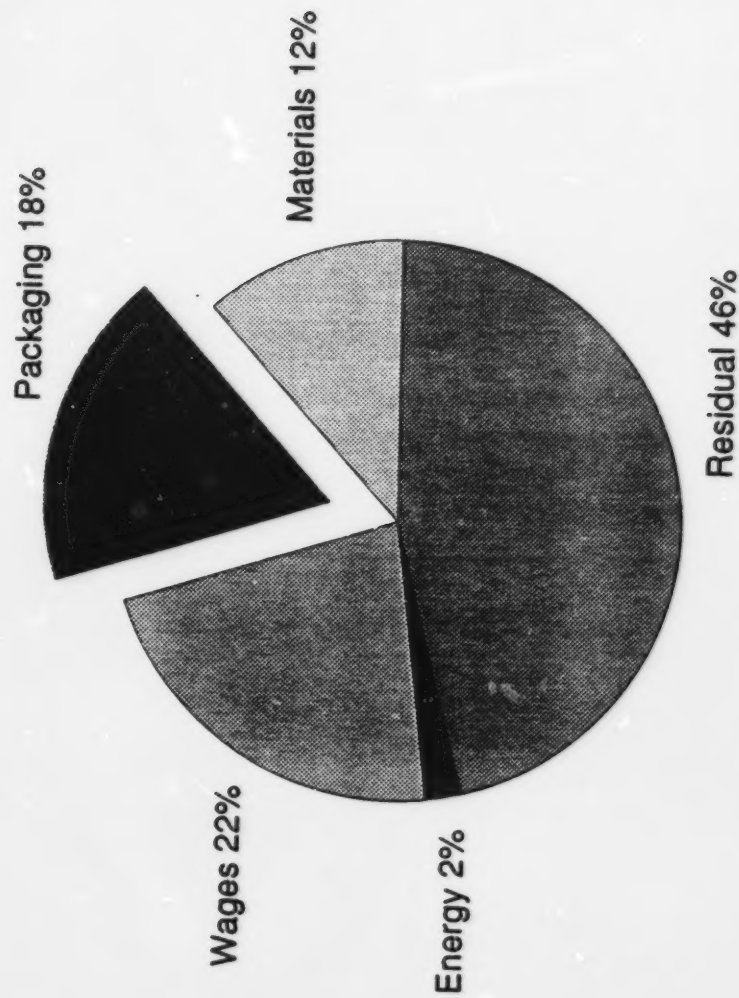
franchiser, which holds the registered trademark of a number of soft drink brands. The franchiser establishes pricing policies and provides overall marketing and brand promotion support. This type of structure effectively eliminates competition from imports.

The soft drink industry consumes nearly 43% of all packaging used by beverage manufacturers, with about 60% of that in metal cans. As a proportion of the total value of production, packaging is about 26% for the soft drink industry, in terms of cost of production packaging can reach as high as 30% (Exhibit 11).

Consumer demand for soft drinks has grown steadily since 1980, and is now almost 25% higher than ten years ago. However, the market is highly competitive and the intense promotional and price competition spawned by the "Cola Wars" has kept profit levels low. Soft drink manufacturers' after-tax profit levels have declined from 4.1% of sales in 1973 to a low of 1.6% in 1985. Since then some recovery has taken place.

Transportation costs of bottles imposes a certain restriction on the market area which can be effectively served from any one establishment, particularly with returnable/reusable bottles, and deposit/returnable requirements in some province limit competition from imports. Canadian facilities do not benefit from the economies of scale achieved by those located in more densely populated countries. As a result, the average value-added per employee for the Canadian industry is approximately 20% lower than the average for the U.S. industry. Also packaging alternatives, such as PET bottles, are replacing glass because they are less costly.

EXHIBIT 12
SIGNIFICANCE OF PACKAGING
BREWERY INDUSTRY



Based on \$ value

Source: Statistics Canada Cat. No. 32-251

Although the outlook for this industry is positive in terms of market demand, competition is also expected to remain strong thus restricting industry profit growth.

BREWING INDUSTRY

The brewing industry produces a variety of beer, lager, ale, porter and stout, in bottles, cans and draught for the consumer and hospitality market. Brand loyalty and product image are key determinants of market success. The industry is also heavily influenced by federal and provincial government regulations and practices. Regulations also govern the packaging allowed and the Canadian market is characterized by the returnable/reusable bottle which accounts for about 85% of retail sales. Breweries account for 37% of the packaging used by the beverage industry, and internally packaging accounts for over 18% of the total value of production (Exhibit 12).

The industry is dominated by two Canadian owned giants - Labatt's and the recently merged Molson O'Keefe, which control approximately 95% of the market. The remainder is served by small regional and specialty breweries.

The brewery industry is characterized by the following factors:

- ♦ a high degree of government regulation which has resulted in a fragmented and regionally dispersed industry structure,
- ♦ a flat market since the mid-1970's, due to the change in demographics and consumer preferences,

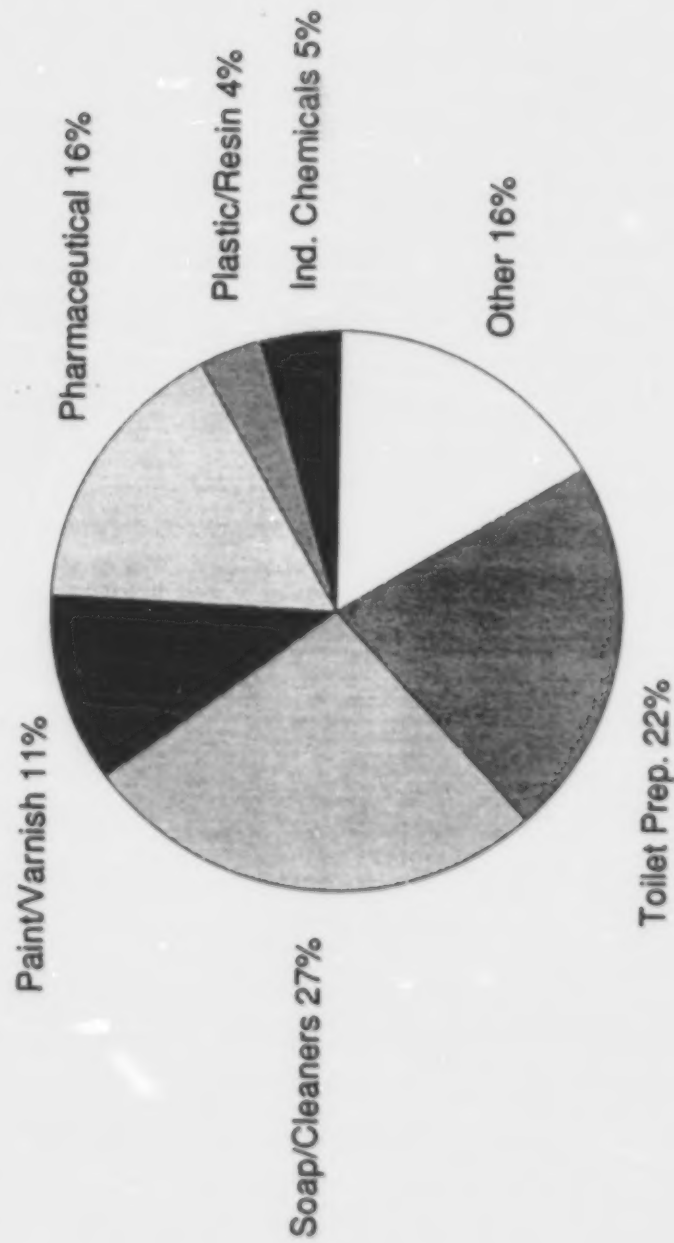
- ♦ a high level of taxation by both federal and provincial governments (taxes account for 47% to 63% of the retail price), and
- ♦ intense competition for market share, in a flat market.

The key factors influencing international competitiveness include:

- ♦ Inability of the Canadian industry to achieve economies of scale similar to those enjoyed by their U.S. counterparts due to government locational requirements, which may make it difficult for Canadian firms to compete in a continentally integrated market.
- ♦ Canadian brewers in the past have paid a substantially higher price for their barley, at times 60% higher than firms in the U.S. This price differential will eventually be harmonized. However, in Canada the availability of lower quality, lower cost barley is limited. As a result Canadian brewers have less flexibility to lower costs of production through the use of lower priced ingredients.
- ♦ Transportation costs, particularly as they pertain to glass containers are higher and thus limit the market that can be served from any one location.

The outlook for the brewing industry will, to a large part, be determined by changing consumer preferences. Thus, product

EXHIBIT 13 USE OF PACKAGING BY CHEMICAL INDUSTRY



BASED ON \$ VALUE

differentiation through promotion, advertising and packaging will continue to be one of the most important factors in maintaining or increasing market share in the domestic market. CUSTA will not have an immediate impact on the Canadian industry (tariffs will be removed over a ten year period), however it is expected that through the removal of tariffs on packaging, the industry's input costs could be lowered. The industry will face growing competition from pressure by both the E.E.C. and the U.S. to gain better access to the Canadian market.

3.2

CHEMICAL AND CHEMICAL COMPOUND INDUSTRIES

The chemical and chemical compounds industries include pharmaceuticals, toilet preparations and cleaning compounds. This industry accounts for 13.5% of all packaging consumed. The three industry groups profiled in this section account for 68% of the chemical and chemical compound industries' consumption (Exhibit 13).

PHARMACEUTICALS AND MEDICINES

The Canadian pharmaceutical and medicines industry can be classified into four broad categories:

- ♦ ethical drug products (including both prescription and non-prescription drugs),
- ♦ proprietary drug products,
- ♦ veterinary products, and
- ♦ biological products.

Ethical drug products are not advertised to the public and are obtained through a physician's recommendation. This category is largely composed of specialty drugs developed by large international pharmaceutical firms and protected by strong patents internationally. There is a generic segment to this market which is comprised largely of Canadian firms which produce copies of patented brand-name products.

Proprietary drugs are sold mainly over the counter and are widely advertised. Biological products include vaccines, hormone products and blood products.

The active ingredients in pharmaceuticals are fine chemicals, which are compounded or manufactured into dosage format products by the pharmaceuticals industry. Fine chemicals can represent up to 40% of the cost of the finished product. Very little fine chemical production occurs in Canada.

A number of large multinational companies dominate the pharmaceutical industry worldwide. They usually manufacture the patented active ingredients for their own drug products in their country of origin, as well as in important market locations, and in certain countries offering favourable tax treatment. Concentration is increasing, accompanied by greater centralization of research and development activity.

In Canada, the industry's assets are 85% owned by foreign interests, those which are Canadian owned are concentrated in smaller

companies. Regionally, the industry is concentrated in Ontario and Quebec (84% of establishments). Imports are not a major factor in this industry, as they account for less than 10% of the domestic market for finished dosage drugs. Canadian subsidiaries import the fine chemicals from their parent companies and then formulate and package them for the local market.

The industry operates in a highly regulated environment, which has an impact on its performance. It is due to the regulatory parameters for this industry (excluding biological products) that multinationals have established subsidiaries in Canada, rather than supply the market from their home base. The biological products segment is not restricted by a branch plant structure and therefore has a higher level of research and development activity and a history of product innovation.

Although tariffs for all pharmaceutical products range from zero to nearly 25%, it is the non-tariff barriers which provide a more effective protection. The principal non-tariff barriers are regulations governing health and pharmaceutical products in the target market, such as stringent requirements for new product release, extensive clinical trials and domestic inspection of manufacturing facilities. This complex and detailed regulatory environment also affects the choice of packaging for many of these products, particularly those aimed at consumers. Therefore, although this industry is well structured to respond to NAPP, the regulatory framework would limit its ability to achieve significant gains in packaging reduction, reuse and to some extent recycling.

TOILET PREPARATIONS

This segment of the industry is involved in the manufacture of a wide range of products, such as powders, liquids, lotions, creams, etc., which can be grouped into cosmetics, toiletries and fragrances. The manufacture of most toiletry preparations consists of batch-type operations, involving blending of raw material, filling into retail size containers and packaging for shipment to retailers and testing for quality. Typical U.S. operations are much larger and employ more sophisticated, highly automated, computer controlled equipment, designed for larger production runs.

The Canadian industry consists of two major segments which are distinguished by ownership and nature of activity. The larger segment consists of Canadian subsidiaries of foreign owned multinationals and account for over 75% of shipments. The domestically owned segment of the industry consists of relatively small manufacturers with typical sales of less than \$10 million. These firms tend to focus on smaller production runs due their relatively broad product range.

The industry has experienced slow but steady growth (between 2% and 2.5% per annum), since the early 1980's. The key factors affecting the industry's competitiveness are:

- ♦ the scale of production, with Canada being hampered by a branch plant structure geared to the domestic market,
- ♦ availability of raw materials, as many of the raw materials are imported, and can represent about 15% to 20% of the cost of production,

- ♦ transportation costs can account for 4% to 5% of the value of shipments and therefore local production is favoured for the more commodity type products, and
- ♦ marketing and advertising costs are significant (equalling production and packaging costs in some cases) particularly for supporting brand name products.

Tariffs were important in creating the Canadian industry, encouraging multinationals to locate subsidiaries north of the border. The 10% tariff ceiling is being phased out in 10 equal segments under the CUSTA. The current round of multilateral trade negotiations is expected to reduce, by one-third, the import tariffs on cosmetics and toilet preparations from GATT countries. This could result in increased competition from European toilet preparations.

Non-tariff barriers (NTB's) could be a bigger impediment to trade as products are affected by:

- ♦ ingredient approval,
- ♦ manufacturing standards,
- ♦ labelling requirements,
- ♦ language requirements,
- ♦ metric statement of contents,
- ♦ transportation restrictions (cost),
- ♦ standard package sizing, and
- ♦ health and safety data requirements.

In addition, the WHMIS requirements, applicable to Canadian manufacturers could, according to the industry association, adversely affect the cost competitiveness of some domestic producers.

The cosmetic and toiletries industry is highly competitive. Product differentiation through promotion, advertising and packaging is one of the most important factors in maintaining or increasing market share. Packaging also plays an important role in the function of protecting retail inventory from theft. High ticket items (i.e., perfumes) sold in small consumer packages are subject to high pilferage and therefore retailers will not stock these items unless they are packaged in a manner to help curtail the problem.

Health and Welfare Canada is proposing to require ingredient labelling and bilingual labelling of all toilet preparations. Many of these products are presently sold in very small packages. The size of the packaging will have to be increased or leaflets, etc. attached in order to permit listing of all ingredients. It appears that these regulatory requirements may limit this industry's ability to achieve significant gains in packaging reduction.

There are currently many imported products offered for sale in Canada that do not comply with Canadian labelling or health and safety regulations. Many of these products come from the U.S.A., and with the FTA more of these products will be sold in Canada. Health and Welfare Canada and Consumer and Corporate Affairs do not have the resources to police the marketplace to ensure that Canadian producers have a "level playing field" when complying with existing government regulations. There must be a commitment from

government to provide resources to back up any proposals that would impose additional regulatory burdens on the Canadian industry.

SOAP AND CLEANING COMPOUNDS

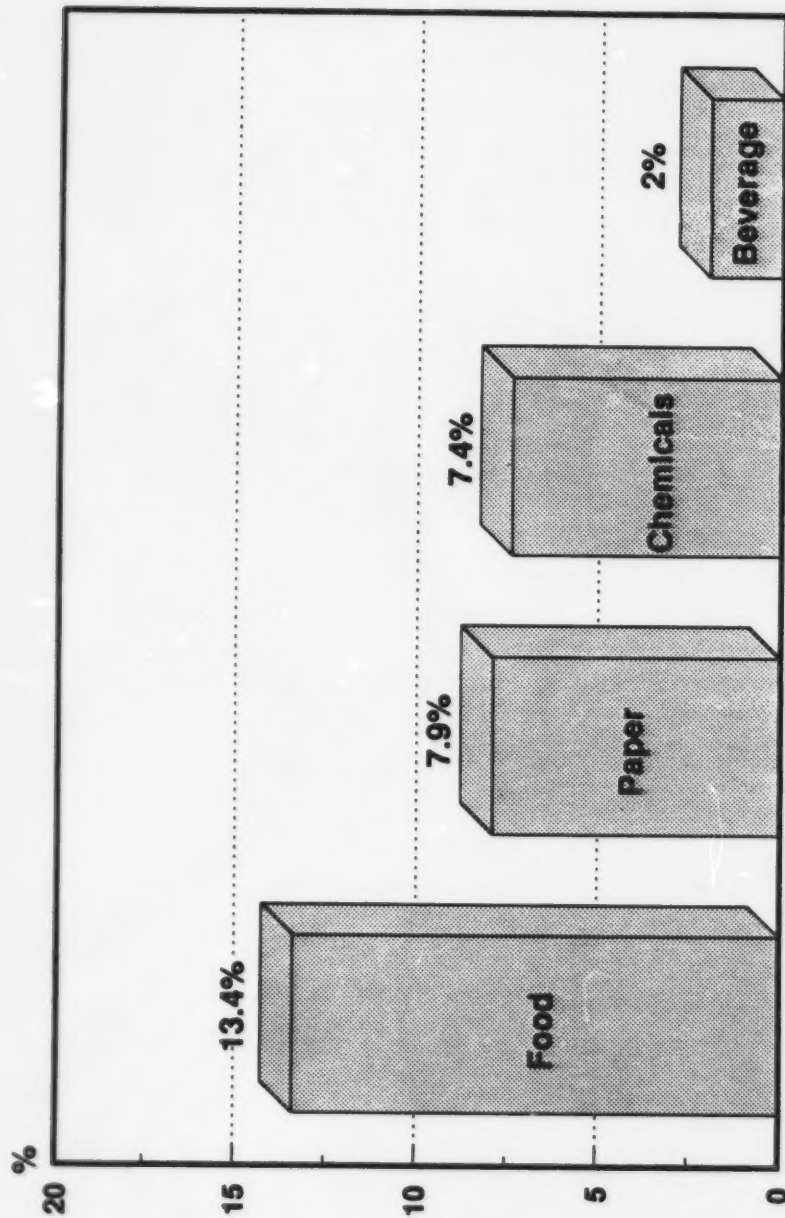
This industry is made up of establishments primarily engaged in the manufacture of soap in any form, synthetic detergents, cleansers, washing powders and cleansing preparations, including scouring powders hand cleaners, laundry bleach and blueing. This segment accounts for 27% of the chemical industry's use of packaging, which is dominated by plastics packaging.

The industry is focused on supplying the domestic market, with exports accounting for a modest 5%. A large portion of the industry is foreign controlled - accounting for over 90% of the market. Regionally, the industry is concentrated in southern Ontario (with 87% of shipments). The firms tend to be vertically integrated with many of supplying their own raw ingredients as well as manufacturing their own packaging. Some firms have diversified into food processing, personal care products and industrial chemicals.

Since the industry is mainly foreign owned and focused on supplying the domestic market, trade is not a significant factor. Under CUSTA, tariffs are to be phased out over a five year period (by 1994). The industry is also affected by labelling and workplace regulations (such as WHMIS in Ontario) and regulations affecting the transportation of dangerous goods. This industry not only has to deal with the environmental impact of its packaging but also those of its products, many of which have been categorized as hazardous materials.

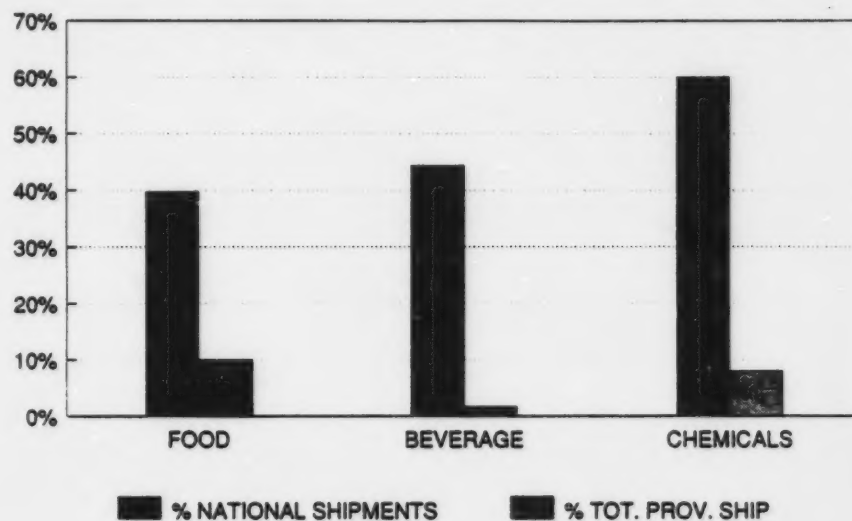
EXHIBIT 14

IMPORTANCE OF MAJOR PACKAGING USER SECTORS (% of Total 1986 Manufacturing Shipments)



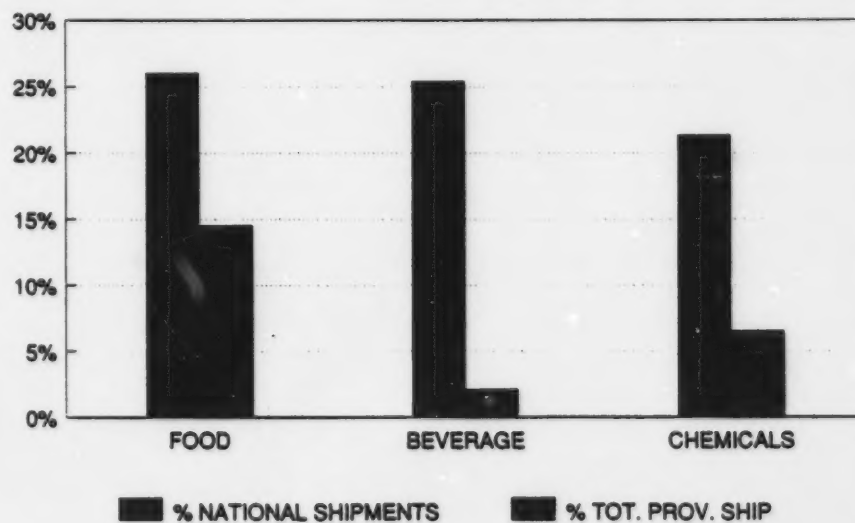
Source: Statistics Canada Cat. No. 31-203

**EXHIBIT 15
ROLE OF PACKAGING USER INDUSTRIES
ONTARIO 1986**



As a % of shipments

**EXHIBIT 16
ROLE OF PACKAGING USER INDUSTRIES
QUEBEC 1986**



As a % of shipments

The impact of competitive pressures stemming from CUSTA will depend on how U.S. multinationals chose to serve the Canadian market, in a North American context. Rationalization and specialization of production runs in Canada may improve cost efficiencies in response to increased competition and the new trading environment.

3.3

THE REGIONAL PERSPECTIVE

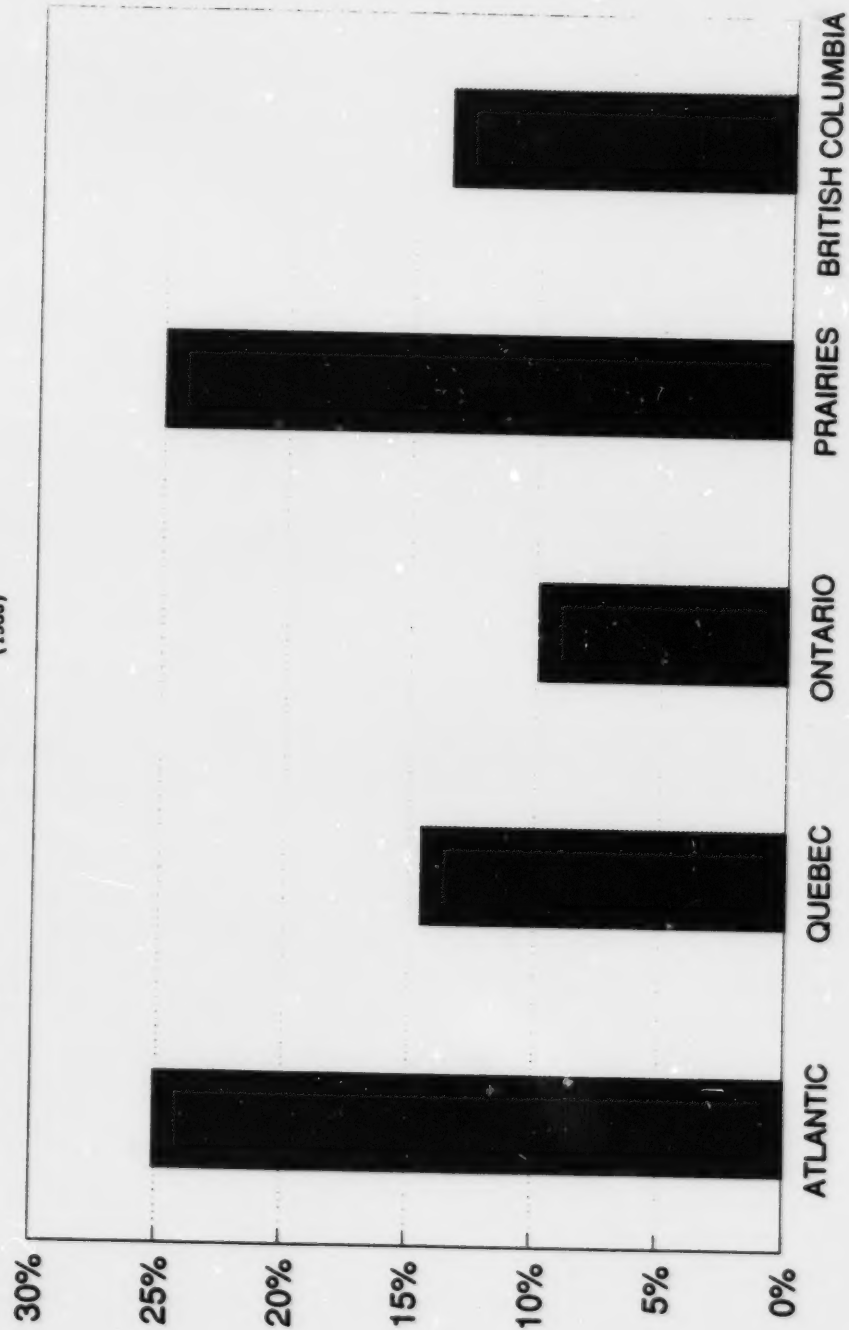
The food processing industry accounted for 13.5% of manufacturing shipments in Canada in 1986, beverages 2%, chemical products 7.4% and paper 7.9% (Exhibit 14). Ontario was the origin of 54% of total manufacturing shipments, specifically accounting for 40% of food processing, 44% of beverage manufacturing and 60% of chemical products (see Exhibit 15). Quebec was the second highest province of concentration, accounting for between 21% and 26% of shipments for the those three industries (see Exhibit 16).

Of the three major packaging user industries, the food processing industry is significant, in terms of proportion of provincial shipments, in most regions across the country, with somewhat more emphasis in the less diversified regional economies such as the Atlantic provinces and the Prairies.

Processed food shipments, in both the Atlantic and Prairie regions, account for approximately 25% of total manufacturing shipments in those regions. In more diversified economies, such as Ontario, Quebec and British Columbia processed food shipments account for between 10% and 15% of total provincial manufacturing shipments (Exhibit 17).

EXHIBIT 17 SIGNIFICANCE OF THE FOOD INDUSTRY BY REGION

(1986)



As a % of shipments

Source: Statistics Canada Cat. No. 31-212

Beverage industries account for a much smaller percentage of provincial shipments, ranging from between 6.4% in Newfoundland to 1.6% in Ontario. Also, for some provinces beverage industry shipments data are suppressed to maintain confidentiality.

The chemical and chemical compounds industry is concentrated to a large extent in Ontario and Quebec (over 81% of Canadian shipments), but accounts for 7.9% and 6.5%, respectively, of total industrial shipments in these two provinces.

The regional distribution of the main user industries illustrates the relative importance of those industries to their respective provincial economies. Although, most of the user industries are concentrated in Ontario and Quebec, they have more significant role in other provinces. The industries in the provinces outside of Ontario, Quebec and to some extent British Columbia, are generally weaker and less able to respond to competitive pressures. The reason for locating in secondary markets is generally influenced by transportation costs or government regulations.

3.4

THE RELATIVE ABILITY OF THE KEY USER INDUSTRIES TO RESPOND TO NAPP HAS TO BE CONSIDERED

Although three major packaging user industries have been identified (food, beverage and chemical products manufacturers), there are many sub-sectors, particularly in the food industry which have specific concerns which need to be addressed individually. These include:

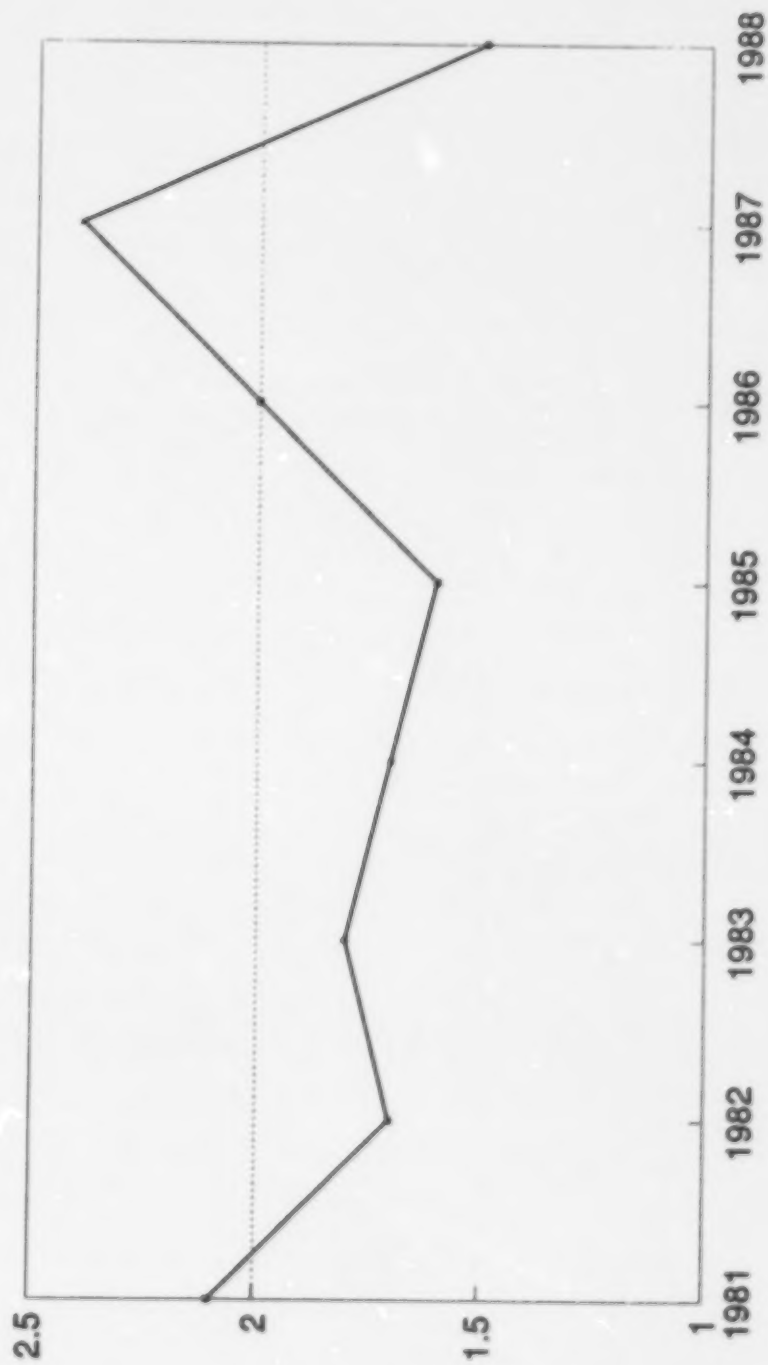
- ♦ low profitability in many industry sectors,

- ♦ small size plants which are not cost efficient,
- ♦ transportation costs,
- ♦ need for new investment in machinery and equipment,
- ♦ branch plant structure,
- ♦ lower labour productivity, and
- ♦ reliance on the exchange rate for competitive advantage.

Under CUSTA and GATT the Canadian marketplace will become more international, which may benefit some sectors and be a disadvantage to others which have failed to modernize due to tariff protection. Generally it is anticipated that CUSTA will lower input costs (such as packaging, raw ingredients, equipment), but on the other hand result in more competition on the output side. Thus improved efficiency and new market development efforts will be important elements of the adjustment process. Some of the food sectors, which are the more significant users of packaging (i.e., fruit and vegetable, dairy, biscuits and confectionary) already experience the highest import penetration levels.

It is likely that some degree of rationalization and specialization of production runs will also occur in Canada, particularly in those sectors where foreign ownership is high. Therefore, any implications for packaging will have to apply to imports in order to maintain a level playing field. Also, the industry is still feeling the effects from a number of mergers and takeovers which have taken place over the past few years. Although the pace of these activities seems to have slowed some, the possibility of much restructuring within the new configuration remains.

EXHIBIT 18
FOOD RETAILERS NET PROFIT MARGIN



Source: Statistics Canada Cat. No. 61-003

Environmental issues will occupy the food, beverage, paper and chemical products industries in the 1990's. They will look at production processes that pollute, as well as their choice of packaging materials. Some firms have already responded to environmental concerns with innovative packaging and changes to their processes.

4.0

**THE FOOD RETAILING SECTOR HAVE EXPERIENCED
REDUCED PROFITABILITY AND INCREASED DEBT LEVELS**

4.1

THE PROFILE OF THE RETAIL INDUSTRY

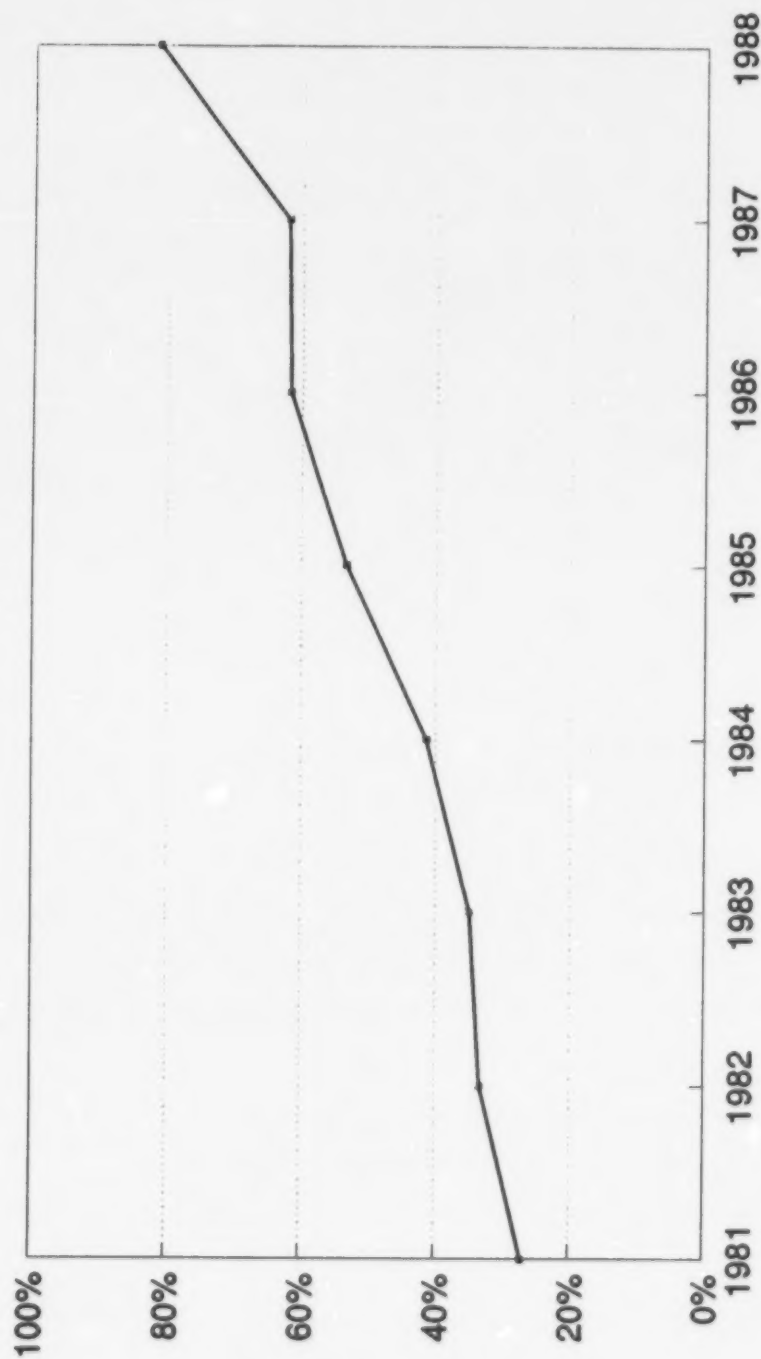
The food retailing sector has been experiencing a profit squeeze, with net profit margins at 1.5% in 1988 (see Exhibit 18). Financial indicators, which show industry performance and reflect industry's ability to assume the costs of NAPP, have declined since 1987 due to significant increases in labour and supply costs. The industry also experienced an increase in debt levels and reduction in equity, as the long term debt to equity ratio increased from 27% in 1981 to 81.4% in 1988 (Exhibit 19).

There is a significant level of competitiveness in the food retail industry, with retailers trying out new technologies, marketing schemes and products to better satisfy customers' tastes and preferences. A number of demographic and sociographic trends are expected to continue influencing the food industry, including:

- ♦ the slowdown in population growth, which affects overall demand,
- ♦ the aging population, which affects the types of food demanded,

EXHIBIT 19

FOOD RETAILERS LONG TERM DEBT LEVEL



Based on Debt to Equity Ratio

Source: Statistics Canada Cat. No. 61-003

- ♦ the continuing trend of more women working outside the home, which creates a demand for convenience foods, extended shopping hours and home delivery,
- ♦ increased ethnic diversity, creates demand for a wider variety of foods, and
- ♦ a greater awareness of health, food safety and environment.

Convenience, speed and ease of food preparation have become critical success factors for new food products. To a large part these factors are related to microwave cooking. The result has been increased growth of products meant for microwave cooking and increased space in retail stores devoted to these products in response to consumer demand. This trend affects packaging of product, as plastics are used in microwave cooking, and meals generally come in their own disposable containers. Also the aging of the population as well as the trend toward less sit-down family meals leads to single serving packaging, which uses more material than bulk packaging.

Retailers have continued to exhibit strong growth through acquisition, which increases concentration and market power on the industry. This has raised concerns regarding the degree of competition in the industry, however, this also gives retailers some degree of influence over the suppliers of products.

4.2

THE ROLE OF THE RETAIL SECTOR IN THE SUCCESSFUL IMPLEMENTATION OF NAPP

The increased concentration and market strength of the retail sector allows it to influence the food, beverage and soap/cleaning compound manufacturers to respond to its needs. Large retailers can leverage packaging change through pressure on their suppliers. However, as noted, consumer preference and acceptance of more environmentally friendly products and packaging will play a key role.

The trend toward environmentally friendly products and packaging is gaining momentum with consumers and retailers such as Loblaw's Co. Ltd. have led the movement by creating a "Green" private label product line. Due to regulatory pressure, retailers have eliminated ozone damaging CFC's from packaging materials. Retailers have the ability to push NAPP requirements on to their suppliers and thus play a pivotal role in NAPP. Several retailers in the U.S., such as Wal-Mart, have requested that their suppliers try to find ways to improve their products and packaging, making them more environmentally friendly and in return Wal-Mart will support them in their stores in terms of shelf space and promotion.

How the retail sector will adapt to a NAPP will vary based on a chain's preferences and existing structure. Diversion of packaging materials already occurs at all levels of industrial production and handling before the final product reaches the consumer.

The food retailers can best assist in the implementation of NAPP through:

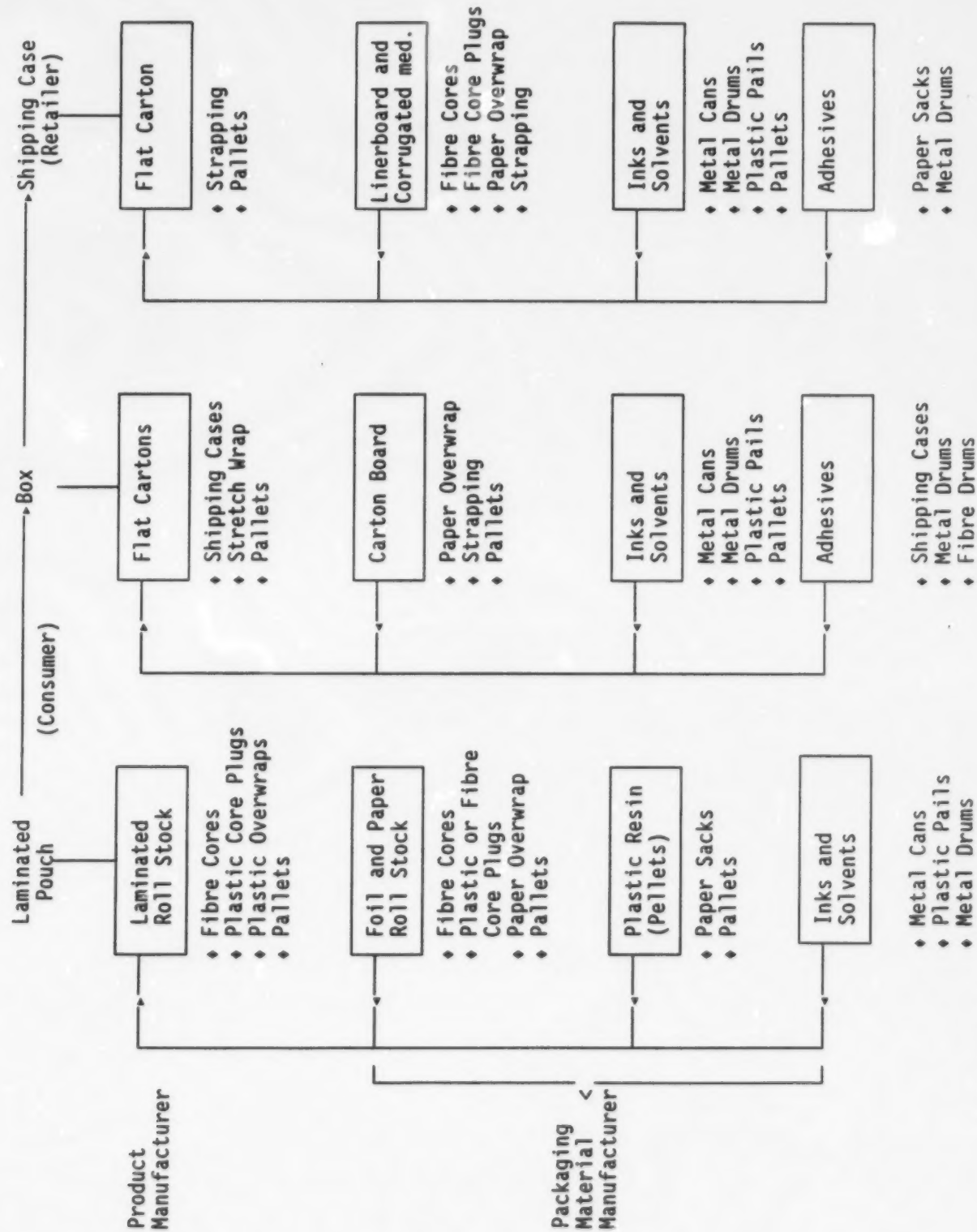
- ♦ supplier encouragement,
- ♦ private label leadership,
- ♦ providing consumer education/information, and
- ♦ working with suppliers to redesign packaging used to get products to the store shelf.

This last point implies a revolution in the way products are handled and displayed in grocery stores. Refillable plastic cases which are used for milk bags in Ontario are perhaps closest to the notion of reusable packaging. By extension, the "case" approach would revolutionize store layout display and restocking of product, but other gains such as reduced handling and costs must also work in tandem to make this a viable means of implementing NAPP.

Because retailers are just coming to grips with NAPP, pressures on suppliers are not consistent. For example, one retail chain prefers shrink wrapped pallets (due to lower volume of packaging waste) while another prefers corrugated boxes (since they are recycled). A closer partnership between grocery product manufacturers and distributors, and the retail food industry, is clearly essential to make major strides in implementing NAPP.

EXHIBIT 20

POWDERED JUICE DRINK CRYSTALS



One of the retail sector's major concerns is collection programs for recycling in which they act as the depository. Retailers do not wish to turn their stores into giant "blue boxes" or collection bins, as this increases their operating costs and is inconsistent with the hygiene needs of food handling.

5.0

THE ECONOMIC IMPLICATIONS OF THE NATIONAL PACKAGING PROTOCOL

The lack of specifics around the implementation of NAPP limits our ability to draw out realistic estimates of the economic impacts associated with the Protocol. There is still a lack of consensus on how the Protocol goals will be achieved and no agreements have been reached on where the re-use, reduction and recycling will take place (by packaging/material type).

In an attempt to provide some qualitative and quantitative indicators of the economic impacts of the Packaging Protocol, we approached leading firms in the 4 major packaging-user sectors and asked the following questions about changes in their use of packaging in response to NAPP:

1. What do you see as the primary impact on your firm of meeting the Protocol's 1992 objectives?
2. Given the specific goals of the Protocol (a 20% reduction in weight of packaging going to disposal, broken down as 5% reduction at source, 5% re-use and 10% recycling), what

packaging types or forms would you target for reduction, re-use and recycling (3R's)?

3. Could you estimate the change in the volume, by weight, and value of packaging material as a ratio of sales (i.e., per \$100,000 of sales) associated with meeting the targets?

All of those contacted indicated strong corporate support for NAPP, but pointed out that they were only at the initial stages of putting the necessary internal organization into place to address the issue, as packaging cuts across many functional responsibilities in any firm. In short, it is premature to gauge how NAPP will be implemented, although small changes are being made wherever possible. The following sections draw out some of the considerations which are relevant to their decisions on the implementation of NAPP.

5.1

A PRAGMATIC APPROACH ALLOWS INDUSTRY TO RESPOND IN WAYS WHICH RECOGNIZE INDIVIDUAL NEEDS

A national packaging Protocol must acknowledge the heterogeneity of both the packaging producer and major user industries, and therefore the policies must be flexible since there is no simple or singular best approach. Representatives of different industry groups in the NAPP development process have stressed the need for guidelines to assist producers and users to respond effectively to the Protocol.

Packaging waste is generated at all stages of the production process. Some of the packaging used in the production of a laminated pouch contained in a paperboard box are shown in Exhibit 20. Much of this industrial (vs. consumer) packaging is already recycled. Companies

must have the flexibility to tackle all of their packaging related wastes in the most cost-effective manner. This may require partnerships between users and producers of inputs to the production process to develop new approaches as well as an education program for consumers. A rigid stance will result in a much more difficult and less efficient adjustment process. A strict regulatory environment could stifle creativity of the packaging industry to develop innovative solutions. Thus, industry advocates a voluntary approach within a framework of guidelines to assist them to determine packaging options which respond effectively to the 3R's of NAPP.

Voluntary actions by industry could be coupled with incentives such as environmental tax credits to provide "carrots" to producers and users of packaging. However, it is important that these incentives be seen as more than just a "pat on the back".

Industry has expressed its support of the "spirit" and direction of the Protocol, however, cautionary flags have been raised as to the implementation of the policies. The Protocol must be sensitive to the constraints and competitive pressures under which Canadian industry operates and thus not place too great a demand in too short a time for the industry to be able to respond. The short term goals should remain attainable so that industry can experience early success and continue towards meeting the longer term goal of 50% diversion from the waste stream. The short term requirements must also apply to imported packaging.

Another reason to focus on incremental steps is that the waste management preferences and hence the recycling and re-use systems

have not yet been decided upon nor are they fully in place. Both the packaging producers and users are reluctant to make major changes to their processes requiring significant capital investment, until the recycling infrastructure (not just collection systems) is agreed upon and in place. This should also be coupled with a consumer education program.

Revising product design is a costly and lengthy process. It takes approximately two years to redesign and produce a new packaging format for a product, therefore targets for 1992 should be kept to those levels that industry feels it could achieve without including a major redesigning process.

A critical issue which will influence compliance with NAPP, is governments' ability to ensure a level playing field, both in terms of the infrastructure with which provinces choose to meet the reduce, reuse and recycle targets as well as ensuring that imports are subject to the same policies.

The infrastructure in place in any province may to some extent impact on the ability of a firm to do business in that province as well as affect the attractiveness of that province as a business location. Industry's main concern regarding "infrastructure of choice", is that it may translate to eventual material bans and require them to sell a product in different packaging in different provinces. In a market the size of Canada, this is not economically realistic.

Imports which currently do not comply with existing labelling and packaging standards in Canada, harm the domestic industry with which

they are competing. Industry representatives have repeatedly expressed concern that it will not be possible to enforce Canada's packaging policies on imports and thus give them additional competitive advantage over domestically produced products. It is important to note that many of the companies in the food industry are multinationals, and if the rules and regulations in Canada are perceived as more stringent than those in their home country, some will switch to importing product from their parent companies in order to maintain their competitiveness. The key to dealing with imports, is that their treatment be decided at the outset of NAPP and be enforced vigorously.

A legislative framework is viewed as a necessary evil to provide a basis for enforcement and hence avoid the "free-rider" problem. Any legislation should be flexible enough to allow industry to respond in the most efficient and productive fashion. Secondly, in order to preempt a multiplicity of regulations stemming from different levels of government, national guidelines are needed to create a uniform set of rules. For example, a regulatory jumble is already being experienced in the United States, where at least 35 state legislatures are considering more than 250 different bills on plastic disposability and recycling, as are hundreds of counties and municipalities. It is estimated that there are over 800 separate pieces of legislation under consideration.

A final but important factor in the pragmatic implementation is the need to focus on creating awareness of and demand for environmentally friendly products at the consumer level. All of the stakeholders agree that changing attitudes and behaviour will be

critical success factors, although there is some disagreement as to the current level of consumer awareness/ demand, and how much of that translates in sales of products. Industry representative state that they will meet consumer demand for environmentally friendly products and packaging, however, until now they have not sales of such products have not been overwhelming. This is due in part to consumers' confusion about what is "environmentally friendly", although the ecology program should begin to address this. A key factor behind the successful implementation of NAPP will be a program which helps consumers make informed choices which will support industry's efforts to provide environmentally friendly packaging and products.

5.2

THE ABILITY OF INDUSTRY TO RESPOND WILL VARY BY SECTOR AND BY FIRM

The lack of homogeneity across producer and user industries and sub-sectors, as well as the regional influences on industry creates some difficulty in applying the same standards across the board. Within industry sectors and sub-sectors there will be differences between firms in terms of their ability, both financial and technical, to respond to the Protocol in a uniform manner.

This analysis has highlighted the competitive pressures faced by Canadian producers and users of packaging which are changing these industries. Most companies indicated that trade, exchange and other economic pressures present a greater challenge to their continued viability. Thus, NAPP alone is unlikely to be the cause of business declines.

Industries which are characterized by a small number of large enterprises, which account for the bulk of the activity on one hand, and a large number of smaller firms which account for the remainder will find it difficult to move in tandem. This leads to the "free-rider" problem, which has been mentioned by both business and government representatives. Firms that will be able to avoid taking steps in response to the Protocol, through being too small and numerous to regulate will have a competitive advantage. The burden of NAPP would therefore fall on the larger firms, which will be expected to make up the difference to meet the appointed targets.

The depth and breadth of various of product lines will also complicate the adherence to the Protocol's policies, as there are numerous packaging types and materials involved. This diversity affects the ability to apply the 3R's at the consumer level. Some level of standardization would assist the process, but standardization at the consumer level is not popular. It would be more effective to create packaging and container standards at the commercial/industrial level, where there are greater volumes and less packaging applications involved. In addition at this level packaging is not used as a marketing as it is at the consumer level.

5.3

FINANCIAL AND MARKET VIABILITY OF IMPLEMENTING NAPP ARE CRITICAL

One of the critical issues in terms of implementing NAPP is timing. Food and beverage sectors are major packaging users and are already under competitive stress due to CUSTA. They must balance the environmental responsibilities of NAPP with bottom-line operating

results. It must be recognized that industry requires sufficient time to adapt to the new policies, for example, to:

- ♦ develop criteria to assess the environmental impact of their current packaging (in some cases this involves numerous product lines and numerous products within those lines),
- ♦ examine all aspects of packaging waste generated through the production process, and
- ♦ redesign the packaging identified as being the most detrimental to the environment (this may require innovation through R&D).

Before these steps are taken, a closer consensus between business and government is essential to determine key directions and priorities.

Another reason for being sensitive to the timeline for implementation, is to have sufficient time to put consumer information programs into effect. The availability of new product packaging should be in conjunction with the creation of informed consumer demand. Consumer demand can influence the degree and rapidity of change by the industry in supplying environmentally sensitive products.

6.0

OTHER ACTIVITY GENERATED BY THE PROTOCOL

The Protocol will influence the economic activity both in forward and backward linked industries, as well as create demand for new industries/activities. Research into the impact of increasing secondary fibre content, in paper, containerboard, corrugated, etc., on the

forestry industry is currently being assessed in Ontario, but until more is known about the implementation of the Protocol, the assessment will be quite general.

Reduction, reuse and recycling of packaging material will have an effect on the firms which supply the raw material as well as on how the packaging manufacturers will produce the products. It is expected that there may be less overall demand for raw materials despite population growth, such as resins, steel and aluminum, if the existing materials found in packaging find their way back into the product stream. To the extent that they are recycled into other (non-packaging) products, the demand for raw materials will be less affected. Packaging manufacturers will also have to change their processes to some extent to accommodate the change in raw material configuration and increase in reuse.

There is also an opportunity to develop new industry in closed end recycling which will use packaging materials and convert them to other types of products.

As more materials are recovered from the waste stream, pressure is put on producers to develop processes to re-use these materials. A good example is in the newsprint industry. However, food-related packaging must meet more stringent requirements and for health reasons contact between the food product and recycled materials is not permitted, with the exception of glass. As a result, with the increasing volumes of food-related packaging new businesses are developing to recycle these wastes into new products. In the U.S., seed money is provided to encourage new businesses in these areas in tandem with

recycling initiatives to develop markets for and avoid gluts of recovered materials.

7.0

CONCLUSION

In summary, the broad use of a wide range of packaging across all sectors, coupled with its concentration in the food, beverage and chemicals sectors, implies a wide range of abilities to respond to NAPP. Financial performance, competitiveness and domestic and international pressures mean that each company will respond to NAPP in different ways. The willingness to respond is generally strong, however the ability to respond is limited by a number of factors. Packaging using industries are critical to the successful implementation of NAPP, but retailers and consumers also play a critical role.

From the perspective of industry, implementation of NAPP as an environmental initiative is a high priority, but the rules must apply to all packaging used in Canada so that NAPP does not confer a competitive disadvantage on domestic industry. A partnership approach between government and industry is essential to work out the critical guidelines for the implementation of NAPP due to its complexity in order to avoid costly mistakes.

APPENDIX I

PACKAGING SECTOR PROFILES (1986)



(1986)

INDUSTRY	NUMBER OF ESTABLISHMENTS	EMPLOYMENT DISTRIBUTION (%)					CONCENTRATION	OWNERSHIP
		ATLANTIC	QUEBEC	ONTARIO	PRAIRIES	B.C.		
Paper Products:								
• Folding Carton and Set-up Box	106	2	29	63	1	5	High (3 firms have majority of market)	100% Cdn
• Converted Paper (Packaging)	801(78)	2	29	63	1	5	20% of establishments account for 45% of Employment	Primarily Cdn***
• Kraft Paper	8	-	22	8	24	46	Oligopoly	71% Cdn***
• Paper (container board) Board	28(18)*	(11)*	42(33)*	35(33)*	-	(17)*	Fairly high (vertically integrated)	85% Cdn***
• Corrugated Boxes	116	3	27	53	9	8	High (vertically integrated)	99% Cdn
Plastics (Bags, Film and Sheeting)	171	5**	27**	48**	12**	8**	12% of establishments account for 44% of shipments	67% Cdn
Glass Containers	12	8*	25**	50**	8**	9**	3 firms supply market	100% Cdn
Wood (Box/Pallets)	206	8**	29(81**)	52(47**)	8**	6**	Low	Cdn
Metal Closures and Containers	99	2	22	63	8	5	11 establishments account for 57% of shipments	80% Cdn

* Based on distribution of capacity in the container board industry

Distribution of establishments.

*** The ownership of the industries were Consolidated Bathurst as a player will have a higher U.S.-owned component as C.B. has been purchased by Stone Packaging of the U.S. earlier this year

INDUSTRY STATISTICS

INDUSTRY	TOTAL SHIPMENTS (\$ millions)	EMPLOYMENT	IMPORT PENETRATION (as % of domestic market)	EXPORT ORIENTATION (as % of shipments)
Paper Products				
* Folding Carton & Set-Up Box	\$784	5,500	4%	4.1%
* Converted Paper (Packaging)	\$1,891(\$719)	15,500(5,500)	9%(n.a.)	9%(3%)
* Kraft Paper	\$440	1,300	12%	46%
* Paper (container) Board	\$1,470(\$885)	7,998(5,400)	(3%)	(31%)
* Corrugated Box	\$1,462	7,900	2.0	0.1
Plastics (Bags, Film/Sheeting)	\$1,292	9,997	27**	18%**
Glass Containers	\$550	6,000 ^e	7.5%	10.7%
Wooden Box/Pallet	\$218	3,084	n.a.	n.a.
Metal Closures/Containers	\$1,265	8,271	12%*	13%*

e = estimate

* = Based on metal stamping and container/closure data.

** = Based on plastics industry in total.

MAJOR PLAYERS

PAPER PRODUCTS								
FOLDING CARTON & SET-UP BOX	CONVERTED PAPER (PACKAGING)		KRAFT PAPER		PAPER/CONTAINER BOARD		CORRUGATED BOX	METAL
Lawson Mardon Group	Aspamill	Manfor Ltd.	Domtar Inc.	Atlantic Packaging Products Ltd.	Hercules Canada Inc.	Dowglass bought by Consumers Glass (May 1989)	Continental Can Canada Inc.	
Reid Dominion Packaging Ltd.	Bonar Packaging Ltd.	Eurocan Pulp & Paper Co.	Consolidated Bathurst Inc.	Domtar Inc. (Packaging Group)	Hoechst Canada Inc.		Ball Packaging Products Canada (Onex)	
Sommerville/ Belkin Industries	DRG Packaging Twin Pak Inc.	Prince George Pulp & Paper Ltd. (Canfor)	Eurocan Pulp & Paper Ltd.	MacMillan Bathurst Inc.	DuPont Canada Inc.		Crown Cork & Seal Inc.	
BCE Publitech Inc.	Domtar/Sonoco Containers Inc.	Cascades East Angus Inc.	Belkin Inc.	C.I.P. Inc.	Union Carbide Canada Ltd.		Ekco Canada	
		Bonar Packaging Ltd.	Cascades Inc.	Kruger Inc.	Twin Pak Inc.		Anchor Cap & Closure Corp. of Canada	
		Twin Pak Inc.	C.I.P. Inc.	Paperboard Industries Corp.	Bonar Packaging		Vulcan Packaging	
			Kruger Inc.	Crown Forest Industries Limited	PCL Industries			
			Atlantic Packaging Products Ltd.	W.R. Grace & Co.				
			Paperboard Industries	Sommerville Belkin Ind. Ltd.				
			MacMillan Bloedel Ltd.					
			Roman Corp.					

SECTOR DESCRIPTION AND ASSESSMENT

GRAFT PAPER

- Heavy, brown unbleached paper made from wood pulp - used for wrapping, making shipping sacks, grocery bags, gummed tape, filters.
- Wide range of grades - most common is sack kraft.

CONTAINER BOARD

- Component materials of liner board and corrugating medium used to produce corrugated board.
- Some mills produce both, others specialize in one component.

CORRUGATED BOXES

- Corrugated container industry is the biggest converter of paper board mill products and largest segment of packaging industry.
- Provide low-cost containment and protection for goods moving through national and international distribution systems.

Performance Trends

- Reduced demand due to product substitution and increased use of bulk handling systems.
- Last decade characterized by low prices and low margins.
- Depressed profits have limited ability to undertake capital improvements.
- Market demand perceived as sluggish.

- Growth is directly correlated to the demand for corrugated containers (approximately 3% per year and holding steady).
- Linerboard producers have low net returns and rates of capital formation because a high cost raw material is used in a low yield process to produce a low-value product, a better return is made on producing the corrugated medium.
- Industry has experienced rationalization of capacity.
- Western producers more competitive than eastern counterparts.

- Demand grew quickly in 1950's and 1960's, now the market is more mature and growth is expected at 3%.
- Highly competitive climate - price levels have not kept pace with increased production costs and margins have been low.
- Rate of capital formation not sufficient to bring about efficiency improvements.

Structure

- Industry is vertically integrated to wood-pulping facilities, but only 2 players are integrated forward into converting operations - mill and converting capacity is relatively small.

- Most mills are integrated forward with container production.
- Eastern producers (exc. one) are all integrated and heavily oriented to supplying the domestic market.

- Overcapacity exists in the corrugated and sheet operations.
- Operations integrated back to container board production.

Strengths

- Western Canadian mills more efficient than those in the east; larger and more specialized
 - labour component less costly
- Some advantage to supplying Asia/Pacific Market
- Canadian mills are older than those in the U.S., Sweden and Finland.
- Eastern Canadian mills have more fragmented production, cannot achieve economies of scale
 - capacity is 125 tonnes/day compared with 500-600 tonnes/day for world scale
- Transportation costs to Europe preclude competitiveness vs Sweden or Finland.
- Price dependent on U.S. production savings.

- Canadian mills have an edge in energy costs.
- New technology is widely available to all producers.
- Return on investment not sufficient for heavy investment.
- Canada is a residual supplier in the world market (6-8% of world trade).
- Container board is a commodity and sales are determined by price.
 - small domestic market
 - residual supplier for export market
- Reduced labour efficiency due to short runs.
- Eastern mills at a cost disadvantage for wood.
- Transportation costs limit market access.

- Transportation costs have fragmented the Canadian market.
- Production runs are short as a variety of products are produced - no specialization, cannot achieve economies of scale.
- Material costs are higher in Canada (by 15%-20%) than in the United States.
- Canada experiences only 60% of U.S. labour productivity levels.
- Industry is domestically oriented, protected by tariffs.
- FTA will phase-out tariffs over 5 years.
- Technology is available but not all producers are able to purchase new equipment.

Assessment

- Industry passed the mature stage.
- Little or no prospect of overall growth.
- Canadian domestic demand will decrease.
- Eastern Canadian mills less efficient than Western counterparts.
- FTA is not expected to have a large impact on the industry.

- The FTA is expected to have an adverse effect on Eastern producers, as Canadian converters will look to mills for competitive pricing vis-a-vis the U.S. mills in eastern Canada already have low margins.

- Competition is expected to increase, with Canadian producers losing market share.
- Long term viability of some mills is questionable.